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SCIENCE AND INDUSTRY

AUG 11 1941

Inflation Can Be Stopped

REFERENCE
DO NOT LOAN

The President has stated "We face inflation unless we act decisively and without delay."

The proposed action involves control of prices. To be effective, price control must be absolute and must apply to all things. That means state socialism and the end of individual enterprise.

This country is planning to spend untold billions to preserve our way of life. To what purpose—if we lose what we are fighting for in the process?

There is a way to avoid inflation, and that is by taxation. Income taxes should include every income. There should be a Federal sales tax at point of consumption. Put the rates high enough to balance the regular budget, and stop the waste.

AUGUST 1941



Suzie says:

"best way Ah knows to make butter is jest keep that dasher workin' up an' down."

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THE H. K. FERGUSON COMPANY

Harold K. Ferguson
President

CLEVELAND *Factories*
 by NEW YORK
 Ferguson

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Volume 110, Number 8

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MANUFACTURERS RECORD

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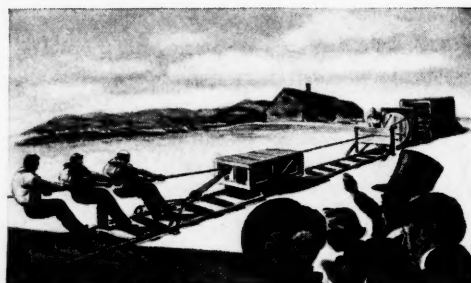
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Shown to the right is John A. Roebling's first crude wire rope making machine, used at his pioneer plant in Saxonburg, Pa.



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DEFENSE SPENDING AND ANOTHER KIND

The 1941 Federal Tax measure reported by the House Committee threatens to make the four or five per cent of the population which pays all income taxes dig down deeper than ever.

Higher taxes have been expected. They are necessary, but a grievous mistake is being made in refusing to broaden the base to include all incomes.

One of the reasons given for higher income taxes is to avoid inflation, but the great number now exempt are being assigned no share in the responsibility. They do most of the spending, and the urge to spend by reason of full pocket-books is strong.

The income tax is not being applied to a sufficient number to be a real brake on inflation. It still makes a few pay the bill.

A general sales tax, which the MANUFACTURERS RECORD long has advocated, would accomplish the purpose better, and the cost of Defense would be met more readily. The politicians fight shy of it, however, and will adopt it only as a last resort.

Those who pay income taxes, being a small minority, have little say at Washington; if they had, they could justly object to the way money is being squandered. Their objection would not be to Defense spending, although the confusion and contradictory practice of incompetents are creating costly bottlenecks. They could object to "Government as usual" with all that that means in outlays for so-called social gains, which are running to sums so huge most commentators have lost track of them.

The minority that pays the income tax bill would recall that it has been told rather vehemently—there cannot be "business as usual." But Government goes on with its business of spending without abatement.

Not only does the number of job-holders and bureaucrats increase, but they are paid more for their work than private industry can afford. In fact, such competition offered by Government is making it difficult for private employers to meet their own requirements.

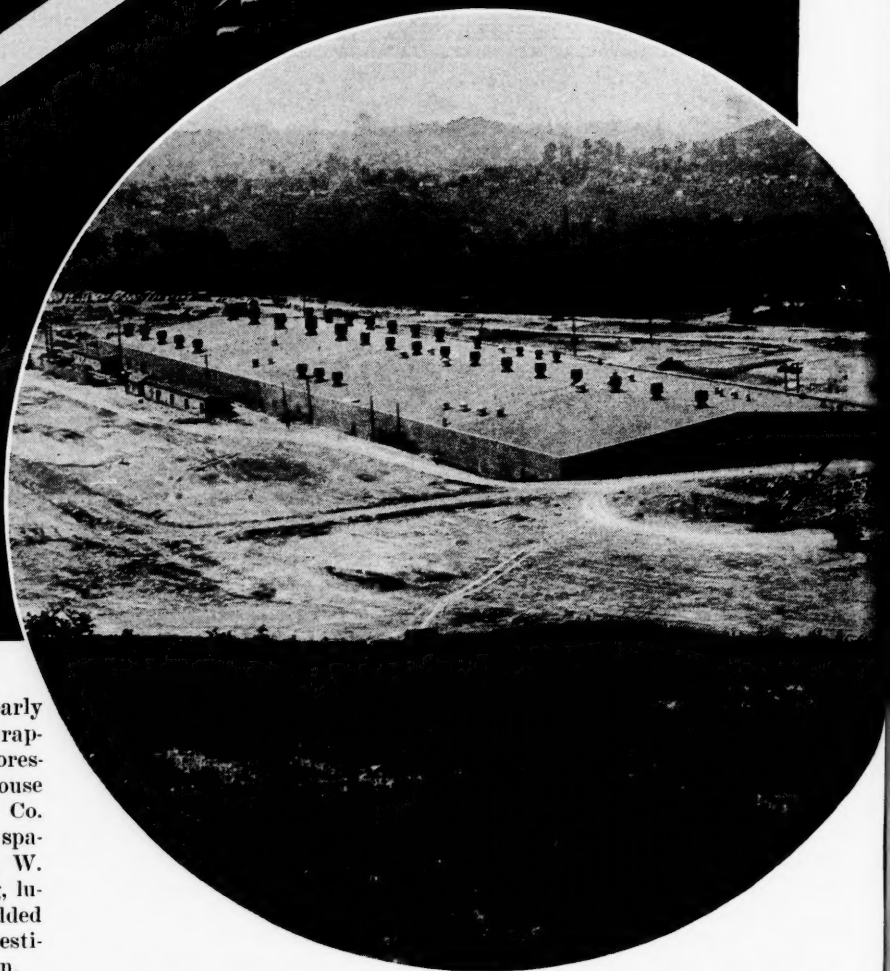
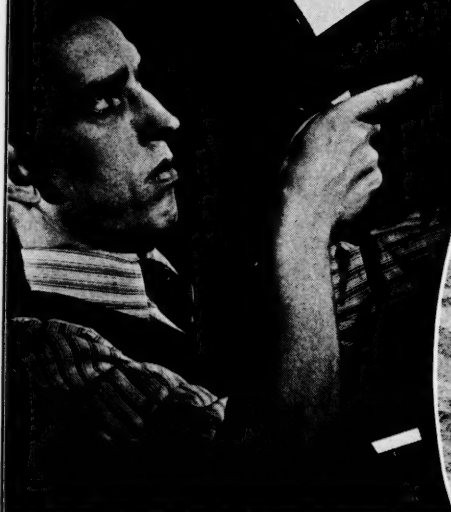
The President said some of the spending should stop, and Mr. Morgenthau said one billion dollars could be cut off the expense account. Unhappily, the evidence of any attempt to do it is lacking.

On the other hand, it is planned to hand out more money than ever. The Commissars of the New Deal are still on the job, while the minority pays and pays—not for Defense, but for ideological foolishness that will not work.

The people are glad to sacrifice to make defense complete, but they have a right to demand the elimination of wasteful outlays by Washington. A large part of the tax bill is due to such waste.

Are votes so precious that even the country's solvency must give way to political greed for ballots?

FLUORESCENCE *from* WEST VIRGINIA MOUNTAINS



A \$3,000,000 move was made early this month to supply the rapidly rising demand for fluorescent lights when Westinghouse Electric & Manufacturing Co. started operations in a low, spacious building at Fairmont, W. Va., where 200,000 of the long, luminous lamps will daily be added to the present production estimated this year to hit 20 million.

Practically windowless, air conditioned and illuminated with the same tubes it will produce, the plant marks culmination of one of the country's recent speedy industrial construction projects. But seventy-six hours of working time were required for erection of the steel skeleton around which the building is fashioned.

The new plant was placed in operation approximately five months after construction crews first arrived in March on what was still a snow-covered hillside, proudly pointed out by G. H. A. Parkman

and Charles B. Sittman, director and chief designer, respectively, of the Westinghouse construction and maintenance forces who carried out the work.

Nearly five acres of West Vir-

The main building of Westinghouse's new \$3,000,000 fluorescent lamp plant at Fairmont, W. Va., is shown in circle above. 224 by 885 feet, it will house all machines, a six weeks' supply of raw materials and finished lamps as well as offices, locker rooms, cafeteria, etc. Built of permanent non-combustible materials, the framework is steel with exterior masonry topped by stone copings. The roof is poured gypsum with built-up tar and gravel covering.

ginia are covered by the 224 by 885-foot main structure. Grouped around are seven smaller auxiliary buildings, all part of an extensive layout which includes a system of paved roads and driveways, parking lot, bus terminal, water reservoir and other utilities. The entire area is being fenced and equipped with floodlights for night illumination.

"Blackout" plant construction throughout the country is understood to be the reason behind the relatively short notice upon which the plant was established. Fair-

mont was selected because of its proximity to an adequate supply of fuel gas, the chief fuel used in fusing the tubes and components into finished lighting units, it was pointed out by R. L. Kriedler, Manager of the new factory.

The lamp plant and a \$1,300,000 glass factory, work on which is now being done, will ultimately consume 40,000,000 cubic feet of gas monthly. Transportation, electric power, water service and the labor supply were other factors. Proof of the labor supply are the 9,500 applications received by Personnel Director William Short. From 800 to 1,000 workers will be employed—in two shifts.

Operators of the numerous machines comprising the plant's equipment are being instructed by key men brought from the Westinghouse lamp plant at Bloomfield, N. J. Experience has shown that it takes from three weeks to as many months to train fluorescent lamp workers, depending on the operation, some of which, such as spotwelding of the cathodes are tedious and exacting.

Fluorescent lamps differ in principle from the pear shaped incandescent lights. In the latter the tungsten wire is depended upon to give the light by resisting passage of the electrical current, thus heating itself to incandescent. The fluorescent light, however, has no wires running its entire length. A mixture of mercury and argon replace the filament. The mercury in vapor form gives off an ultra-violet light when "bombarded" by the current which enters through short wires at each end of the tube. Reaction of the phosphor tube coating to the ultra-violet rays results in the soft luminous glow given off by the lighted tube.

The course of a fluorescent light along the assembly line is interesting and intricate. Major operations are known as bulb preparation, parts assembly, mounting, sealing in, basing, seasoning, final inspection. As described by Charles E. Redlitz, general foreman of the new factory, the bulb preparation requires vacuum cleaning of the tube to draw out all dust and dirt, marking the Westinghouse monogram "W," the wattage and color on the inside

with etching ink, coating the tube interiors with phosphorous at the rate of 530 an hour and then brushing the bulb ends and finally inspecting to discard the defects. A one-gallon jar of the coating powder costs about \$18.00, so the coating inside defective tubes is reclaimed.

The flares, which are not yet being made at the Fairmont plant, are what ultimately form the glass extremities of the tubes. They pass through the parts assembly to the mounting operation, where the tiny coiled cathodes and anodes are spot welded to the nickel wires embedded in the glass. The emission material, described mysteriously as the factor which deter-

mines the length of the lamp, is applied to the cathode at this operation.

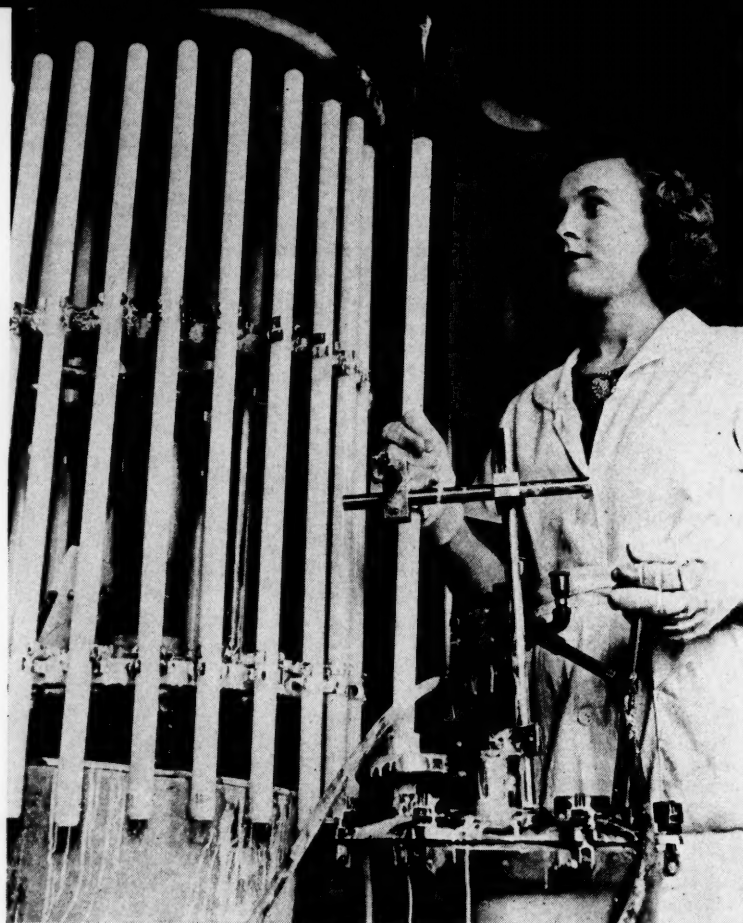
Sealing in is where the bulb and stem are heated until they fuse and the air is extracted by vacuum, immediately after which the mercury and argon are injected. The hair-like channel through which these gases are forced is then sealed in what is called the "tipping off."

The 90 acre tract upon which the Fairmont plant is located sloped toward the river and was cut by two ravines down the hill. This meant that the hillside had to be benched, or excavated to form three steps. The lamp plant is on the middle step. On the top step is being built the new glass plant. The balance of the space is being reserved for other buildings that may be required in the future.

As the atmosphere must be closely controlled in the fluorescent

Seasoning the long luminous tubes is done after they are fully assembled. The seasoning takes about ten minutes. Lamps with defects in color, or those known as "hard starters" are rejected.





Coating the tubes with phosphor, one of the initial steps in fluorescent lamp assembly. The phosphor is what reacts to the ultra-violet rays to make the soft glowing light.

lamp process, the building is completely air conditioned. Dust-free air is particularly important to eliminate irregularities that might affect the finished lamp.

The regular conditioning system, because of this necessity, is supplemented by electrostatic air cleaning cells. These remove about 90 per cent of air-borne particles before the air is circulated. Sterilamps destroy bacteria and other micro-organisms. "Air curtains" in the form of separated double doors with air chambers between,

help keep dust out of the shipping and receiving spaces.

Unusual in air conditioning is the method of cooling. Two separate systems of circulating water are used. One, the primary, is a 3,600 g.p.m. flow pumped at 55° F. from an abandoned, sealed mine eighteen hundred feet away and 150 feet lower than the plant elevation. Route of this mine water is to a heat-exchange reservoir and

back to the mine through a drill hole.

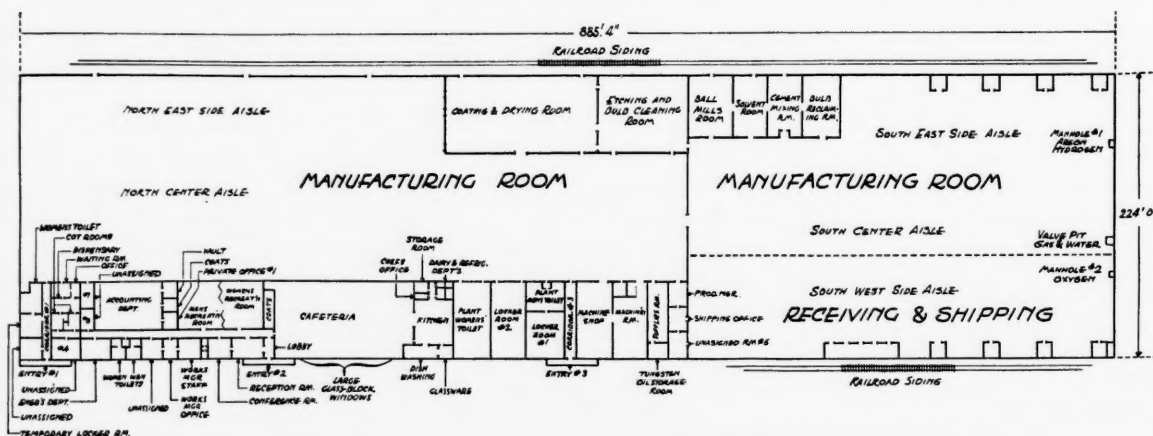
The secondary system consists of a closed circulation of ordinary city water through cooling coils in the building, thence to the exchange reservoir where the heat is extracted and carried away in the primary system. This transfer is accomplished by copper coils completely submerged in the mine water.

All lighting is fluorescent, except in the cafeteria. The 40-foot-candle illumination in manufacturing areas is about twice the average for such plants. Westinghouse RIM twinlamp open-end luminaires are hung end to end to form continuous troughs 12 feet three inches apart and at heights varying from 10 to 13 feet. Vapor proof, glass covered units are installed in the coating and drying, ball mill and solvent departments. This is for protection from process gases.

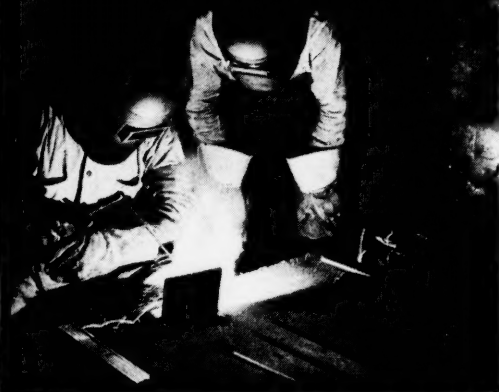
The lamp plant, according to Westinghouse officials, has more mechanical equipment than most industrial buildings. Lamp-making requires much service piping for oxygen, hydrogen, argon, compressed air at two pressures, natural gas and even vacuum. These gases are stored in separate buildings, as is the lacquer and various other liquids used in lamp manufacture.

Floor plan of the main building.

(Continued on page 61)



Ship Need Crisis Fosters Bethlehem Employee Training



WHEN almost overnight Bethlehem Steel Company's shipbuilding division in the late spring of 1940 was called on to expand its construction program to a war-time basis of operations, a pressing need for skilled workers was created. As Bethlehem had coped with a similar emergency in the last war, studies of this previous experience were immediately instituted. This investigation indicated:

- (1) Desirability of continuing and expanding long-term apprentice training which is an established Bethlehem institution, and
- (2) Necessity of supplementing this with emergency instruction designed to supply specialized

training, enabling an unskilled worker to become skilled in a single or few special operations.

Steps necessary for carrying out this latter type of instruction and also for increasing the scope of apprentice training were therefore taken at once.

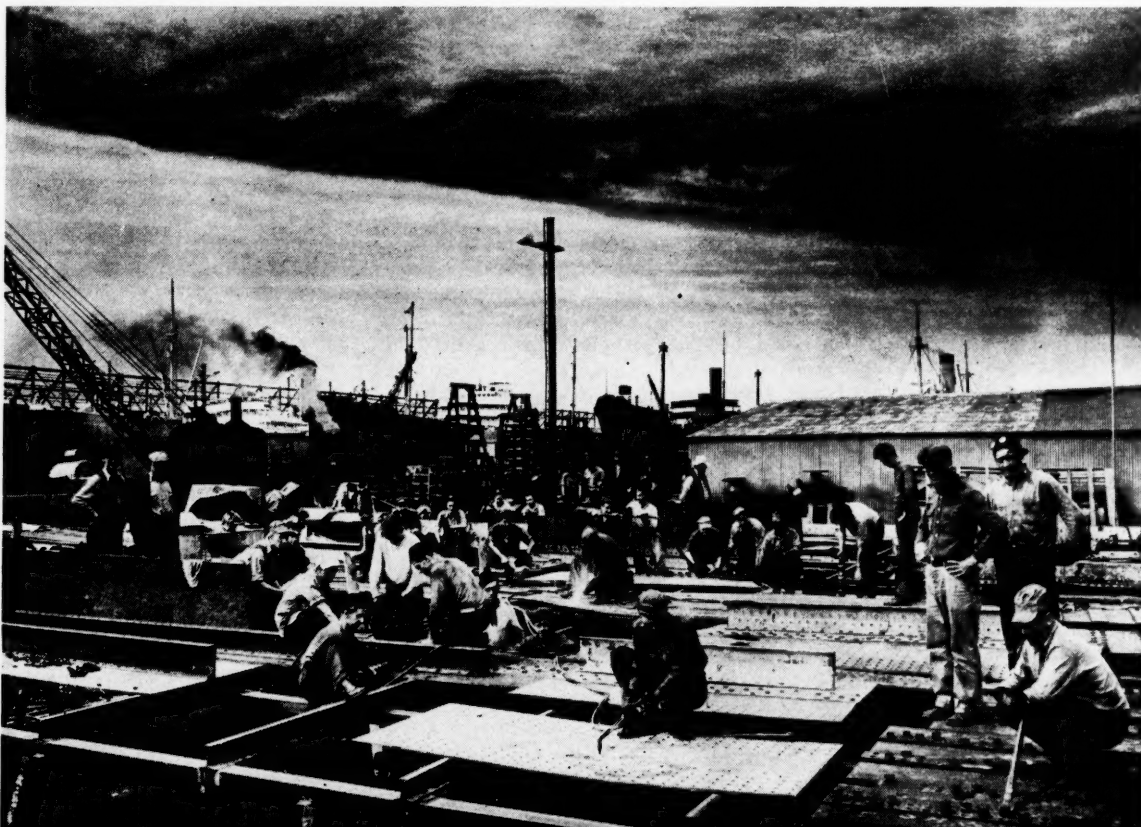
Instructors for the emergency courses, and also additional instructors for the augmented apprentice courses, were selected

from among the best of Bethlehem's skilled mechanics in both the shipbuilding and the steel making divisions. Chosen on the basis of craft knowledge, learning capacity, ability to get along with fellow employees, and teaching aptitude, these experienced craftsmen were put through a course in teaching methods and job analysis. This course was brief, as the prospective instructors were seasoned employees and masters of their crafts whose only need was an understanding of the most effective methods of teaching the newer men.

The Bethlehem program does not assume that finished mechanics can be turned out in a short period.

(Continued on page 42)

While individual welding instruction is a fundamental part of the training as shown above, below is seen a group of beginners learning in the shipyard under the watchful eye of instructors.



Organized Business in South Carolina

by

C. NORWOOD HASTIE

President

Organized Business, Inc.

Charleston, S. C.

A NEW day is dawning in South Carolina; business is organizing, all kinds of business, to establish that united front which has given labor its power, with all the advantages which have accrued from a closely knit federation of forces.

Organized Business, Incorporated, of South Carolina was not founded to become an aggressive body seeking selfish preferences for business, nor has it any thought of opposing the equitable claims of other groups; it exists fundamentally to effect a balance in the growing campaign to distribute the capital assets and earnings of business between governmental bodies and labor, in the form of confiscatory taxes and disproportionate wages. Allied with this is the purpose to present the side of business, when regulatory measures are proposed which would impose unfair or impossible conditions on enterprise. It might be summed up by saying that the general idea motivating Organized Business, Incorporated, of South Carolina is to serve as a correlating influence uniting all business for the protection of all, or for the protection of any one kind of business.

Business has been a plaything of theorists in economics and government who have distilled a number of social panaceas at the expense of those who devote their savings to capital investment. The result is seen, first, in statements attacking business, higher taxes and no dividends; and, second in the discouragement of investment.

Naturally politicians deal primarily in votes, and to give a man something of value for nothing makes the donor very popular. In

Organized Business, Incorporated, was started last fall by a group of outstanding business leaders in South Carolina for the advancement of the business and industrial interests of the State.

C. Norwood Hastie, President, and Homer M. Pace, Chairman of the Financial Committee, both leading citizens and able business men, have devoted a great deal of their own time to the advancement of this idea, which as Mr. Hastie says, is not new, but "the new thing about it is that we are really doing what others only thought of doing."

As the MANUFACTURERS RECORD has pointed out frequently, business men of the country must unite and speak out on problems of common interest. The idea in the work of Organized Business, Incorporated, can be put to use effectively in other States and communities.—Editor.

this case it is a subtle effort to take from one man and give to a hundred. Politically, one vote is lost and 100 gained. Businessmen offered only such resistance as could be presented by a few lobbyists or legislative agents. Such resistance was not formidable, politically, so business has been attacked from front, rear, both sides, underfoot and from overhead until it found itself like a lamb led to the slaughter. South Carolina is not alone in this precarious condition; other states have the same condition, and the national government leads all others, in devising means to regulate and tax enterprise. The basic

philosophy of the South Carolina experiment is to arouse businessmen from their lethargy, prevail upon them to exercise their political rights as citizens, and then to assert their rights not only severally, but jointly.

South Carolina businessmen are not different from other businessmen in their supine acquiescence to the brow-beating tactics of pressure groups of various kinds. Men in business have kept their noses to their desks and slaved over the problems of their individual concerns, leaving to professional representatives all matters of public relations. This was an error of the first magnitude, for it gave to commercial enterprise an anonymity which destroyed its personality; business appeared a cold, unfeeling machine, instead of a warm current of the very blood of thousands whose toil and thrift made possible the building of the plant and the operation of the enterprise. However able counsel may be, legislators regard him as a professional retained in his professional character. When a businessman appears in his own behalf he quite naturally introduces a sense of personal interest and appears as one speaking for his rights. Legislators are accustomed to lawyers, and are likely to interpret a professional defense as different from the defense of an individual speaking for himself and others and the enterprise to which he devotes his life.

To make vivid the reality of the persons affected by legislation, and to give to business an impressive personality is, in brief, part of the general program of Organized Business. In doing that we have called our members to the state capital twice. The legislators saw

on one occasion 270 representative men of affairs from all parts of the state. The first call was in response to an effort to change our practice in punitive damages. It had gone almost unchallenged by citizens as a whole for many years. We have made it an issue in the state, a real issue, which men of affairs think should be handled differently. The second call was on a bill directly affecting many operations. More than a thousand men left their stores, shops, farms and offices and filled the hall of the House of Representatives where the Committee on Commerce had the hearing.

The whole trend of legislation is to please or placate the voters. Legislators accept the most vocal group as indicative of the general sentiment. There is no better way to interpret the popular will than by popular manifestations, public men not being mind-readers, nor particularly versed in the occult. We function to show by a mass effort the effect of proposed measures on our problems of production, distribution, etc.

We have operated during one session of the Legislature—a session of nearly five months—and our experience with the legislators proves that the facts are appreciated by legislative leaders. Time after time the leaders came to us for the facts. Businessmen have the facts and can contribute most helpfully to sane legislation and the avoidance of harmful measures by being ready to cooperate with the lawmakers with the fruit of their experience and investigation.

Organized Business is in the formative period. The greatest difficulty is not with public officials, who naturally wish the good opinion of effective groups, but the most baffling problem at times is to convince businessmen of their own unused, undeveloped power in their own defense, against the socialistic clamor of the day, and to bestir them from their inertia or acquiescent defeatism to join hands with their fellow businessmen in their common interest.

Men of affairs are too accustomed to think only of their own immediate operations and to regard the activities of Congress, the legislatures and city councils as something conjured up by evil spirits or invincible enemies.

Along with this, let me say in sorrow, is such an attitude of fear and trembling as to be cowardice or its handmaiden. Man after man will say, "I won't stick my neck out." They think they are playing safe. But who is to speak when legislation is proposed which so closely affects the cost of operations as to raise the question whether business is an honorable vocation, worthy of encouragement, or a miserable vice, which should be eradicated?

Organized Business is trying to arouse and to recruit South Carolina business in a great effort of service, not for undue profit, but



C. Norwood Hastie

for the larger benefit of our entire state.

This is a day of group action; the organized, vocal group gets what it wants, whereas the unorganized are like lambs for the slaughter.

Organized Business has a directorate of 130 outstanding businessmen from most of the commercial interests operating in this state. It is not political except that regulatory and tax measures are proposed and imposed by governmental bodies. It seeks no class or occupational privilege or benefit. It hopes to hold the scales in balance and thereby to avoid the extremes which would imperil the commercial structure and cut our economic development at the roots.

I quote from the address delivered at the meeting called to consider whether such an organization should be brought into being:

"It shall be our business to ad-

vertise to the country at large that in South Carolina every line of business and industry is pledged to fight for the good of each other's interests. It is no new idea, but it never has been carried out before.

"Disregard of history has caused our troubles. Since the early days of the Roman Empire it has been a truism that when those people in a state or nation whom nature gave the brains and energy to lead did not lead, but instead lay down on the job, the result has always been disaster, and was the cause of dictators arising.

"We are asking you sons of South Carolina to embark upon a great adventure. The adventure we propose only calls for a little time and a little sacrifice to be 100 per cent effective. Doubtless for a short time—a very short time—we shall face derision. We may hear that our motives are unworthy. We may even hear that we have political aspirations. Suppose we do hear these things, especially when it comes, as it would have to come, out of ignorant and misguided minds? The knowledge that we are right thrice arms us.

"Business, industry and the farmers elect and pay our legislators. Why have they not the right to tell (not ask) those whom they send to represent them what legislation they desire put on our books or taken off the books?

"There is no man in this state who has more admiration for 'organized labor' than myself. My only wonder and shame is why, when though kicked around for years, business and industry have never been organized as a whole! Take out the word 'organized' from organized labor and where are they? It is my sincere belief that the hour has struck for business and industry and the farmers to show that at least they have as much sense as labor has shown. With our education, brains and energy we should be able to accomplish all they have done."

The policy "Let George do it" is one of disaster for business, but it predominates very generally among businessmen. "George" as a one-man show can't draw the crowds today. If we want something done *every man must be George* and all Georges must pull together.

Conservation for Defense

THE civilians of this country will have to embark upon an extensive conservation program in order to insure the armed forces having the materials essential to defense, according to Robert E. McConnell, Chief of the Conservation Unit, Production Division, of the Office of Production Management. In a recent press conference, Mr. McConnell outlined the reasons for this necessity and several steps which have been taken or will be taken in the near future.

The defense program as of today is absorbing about seventeen per cent of the national economic income. In Germany it is about fifty-five per cent; in England, fifty per cent. This seventeen per cent has just about taken up the slack of idle plants and unemployment. From here on the impact of increased activity in defense production is going to have its effect on the civilian population. For the past several months it has been clear that this job which has been undertaken would involve considerable sacrifice on the part of the public.

The time for this sacrifice, Mr. McConnell made clear, is now here. So far it has been difficult to see how much of the consumer goods production would have to be curtailed. It is still difficult to be specific, but certain fundamental facts deserve consideration. The first and most obvious fact is that this is a war of metallurgy; metals will play and are playing a tremendously important part. Secondly, this nation, which is the world's greatest producer of metals, is also the world's largest consumer of metals even in normal times. The importation of strategic, essential metals and materials for defense purposes may amount to three and a half million tons

a year. The general deduction may be made that there is not going to be enough raw materials to serve both the defense program and a vastly expanded output of consumer goods.

After Army and Navy defense requirements are filled, the ratio of apparent civilian demands to the remaining supply in terms of units is as follows: aluminum, fifteen to one; cork, ten to one; copper, five to two; mica, three to one; nickel, alloy steels and tungsten, two to one. Marked with an asterisk in the accompanying table are the things for which we are entirely or partly dependent upon imports. For cork, we are dependent one hundred per cent; also we are dependent one hundred per cent for tin, rubber, and certain kinds of mica. We are dependent upon imports for seventy-five per cent of our manganese, seventy per cent of our tungsten and chromite, and fifty per cent of our mercury. It is quite possible that under war conditions shipping would be far more uncertain, and that consumption of these materials would have to be curtailed.

The first step towards avoiding possible shortages is being taken by the government. The stock piles of important and strategic materials are being built up, in some cases to many times their normal stature. One way of accomplishing this is by cutting down or eliminating non-essential cargoes. For example, from the Far East the largest tonnage in non-essential cargoes is sugar. We import about a million and a quarter tons of sugar annually from the Philippines. By cutting down on the sugar imported and utilizing the shipping facilities for rubber instead, the rubber stock pile is being built up.

However, it is apparent from what this government authority stated, materials from foreign lands represent only a part of the problem. We are, potentially, a much stronger nation than Germany. For every ton of steel capacity in Germany as of 1939, we have three tons. For every two tons of steel capacity in all the occupied territory, we have three tons. For every barrel of oil and gasoline Hitler can acquire from all of Europe, exclusive of Russia, we can produce twenty. For every pound of copper that he has, we have four. For every pound of nickel Hitler has, Canada has thirty. For every pound of molybdenum Hitler has, we have about twenty.

Various campaigns are now being conducted in this country to conserve needed material. The aluminum collection is by now familiar to everyone. Soon there will probably be a sign in all filling stations saying "For Defense, Conserve Rubber." There are five ways of doing this. The first is observance of the speed laws, since the faster a car is driven, the more rubber is used per mile. The second is reduction of speed on curves; it has been estimated that half of the tire rubber consumption occurs on curves, which are only ten per cent of the annual trip. The other three suggestions, proper brake adjustment, wheel alignment, and tire inflation, are mechanical steps, the reasons for which are obvious. Mr. McConnell believes that this campaign should save between fifty and seventy-five thousand tons of rubber annually. This, incidentally, is nearly enough to fill the Army and Navy requirements.

Another step that is to be taken is the elimination of tin collapsible tubes of shaving cream, cold cream, and other preparations that are not put in the mouth. Tinned lead tubes will be used instead, affording a saving of approximately one thousand tons of tin a year.

Another broad phase of the program will be substitution. We are at the beginning of an ersatz program. Cork, which comes from north-east Africa, Spain, and Portugal, is one material for

(Continued on page 60)



Savannah's New Shipyard

ON the Savannah River about two miles from the city of Savannah, Georgia, hundreds of men and many pieces of equipment are busily engaged in building a shipyard designed to construct vessels up to 77 foot beam and 525 feet long. The present arrangement is for six ways and may be expanded to a capacity of ten ways or more.

The project reflects the latest methods and practice in shipbuilding and will cost approximately five million

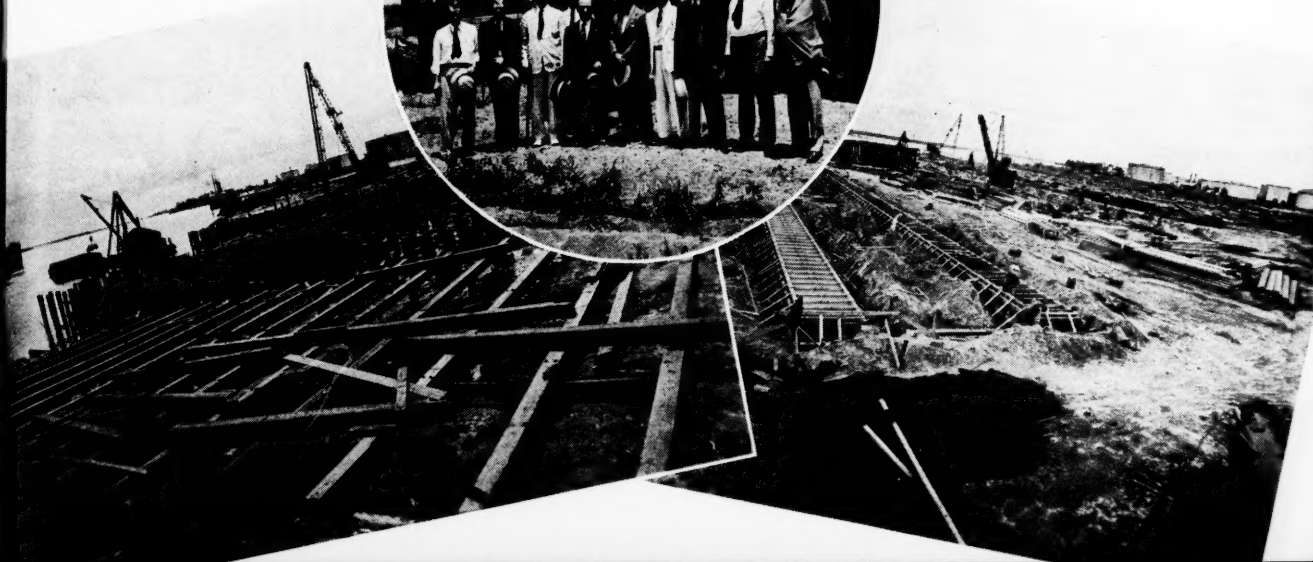
by

William R. Crowley
President
Savannah Shipyards, Inc.

dollars.

The shipyard is being constructed by Savannah Shipyards, Inc. which is made up of a private group of business men with Mr. Frank Cohen of New York at the head. The yard is privately owned and financed. It will be privately operated and be devoted, for the present at least, almost exclusively to defense work for the American and English Governments. Mr. William R.

(Continued on page 61)



Light Plate Steel Capacity To Be Increased

Capacity of wide strip steel mills to make light plates for ships, railroad cars and other purposes will be increased 754,000 tons to a total of 2,480,000 tons by the early part of 1942, the Office of Production Management has announced.

Present total annual capacity of these mills is 12,941,400 tons, of which 1,726,000 is light plate capacity and 11,215,400 is capacity for the manufacture of strip. Of the additional plate capacity to be provided, 654,000 tons will be obtained gradually by the end of this year and the other 100,000 will be available by March 1, 1942.

Light plate production on the strip mills in May, 1941, was 108,772 tons. For the first five months of 1941 it averaged 97,013 tons per month, compared with a current capacity of 143,833 per month. This average unused capacity of 46,820 tons is to be absorbed gradually by the reallocation of suitable orders for light plates and the placing of new orders.

A regulation will be issued shortly to all steel companies with strip and plate capacity, requesting them to reallocate to strip mills plates now scheduled for the regular plate mills, in cases where the sizes and quantities are better suited for strip mill production.

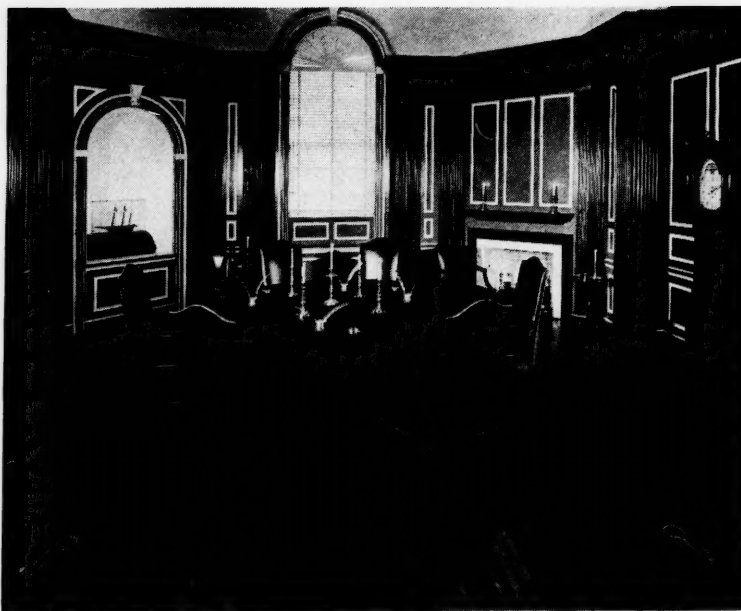
Additional heavier plate capacity is being installed by some of the companies that have strip mills, and more plate capacity is being provided also by companies not operating strip mills. Further additional plate capacity is proposed in the overall expansion of the steel industry now under consideration.

Over \$50,000,000,000 for Defense

A new high figure of \$50,785,000,000 for national defense was scored up on July 26 by the Bureau of Research and Statistics, OPM.

The total of United States Government appropriations and contract authorizations, plus funds made available to the RFC for defense, came to \$47,116,000,000 and British orders as of June 15, 1941, totaled \$3,669,000,000.

The breakdown for United States and British commitments in this country shows that \$11,957,000,000 has been allotted for airplanes; \$8,483,000,000 for naval vessels, merchant ships and transportation equipment; \$8,081,000,000 for guns and ammunition; \$5,530,000,000 for industrial facilities; \$4,353,000,000 for posts, depots and other non-industrial construction; \$4,000,000,000 for other equipment and \$8,381,000,000 for miscellaneous items.



A replica of an 18th century Colonial Counting House of the Equitable Trust Company of Baltimore. Octagonal in shape, the room is paneled and painted in vermilion, edged in white with high-vaulted domed ceiling. Furniture is an authentic reproduction of that used at Williamsburg, Va.

Steel Construction Institute Convention

The annual convention of the American Institute of Steel Construction is scheduled to be held at the Greenbrier Hotel, White Sulphur Springs, West Virginia. The convention will last from October 14 through October 17.

1476 Military Airplanes Delivered in June

The Office of Production Management today announced that military aircraft manufacturers delivered 1476 airplanes during June. Comparable final figures for May showed 1334 deliveries.

COMMODITY PRICES

Commodity	June 1941	May 1941	June 1940
Coal, run of mine bituminous per short ton	4.570	4.547	4.264
Cotton, middling (N. Y.) per pound	.144	.129	.107
Cottonseed oil (N. Y.) refined, prime summer yellow per pound	.115	.105	.060
Corn, No. 3 white (Chicago) per bushel	.82	.78	.77
Wheat, No. 2 Red winter (St. Louis) per bushel	1.02	.87	.97
Pig iron, composite per long ton	24.15	24.15	23.15
Steel, composite finished per pound	.0265	.0265	.0265
Steel, scrap (Chicago) per long ton	18.75	18.75	18.19
Livestock, beef steers (Chicago) per 100 lb.	10.62	10.23	9.69
hogs, heavy (Chicago) per 100 lb.	9.88	8.97	5.04
sheep, lambs (Chicago) per 100 lb.	11.13	10.44	10.16
Southern pine flooring per M bd. ft.	49.143	48.213	40.865
Aluminum scrap, castings (N. Y.) per lb.	.1100	.1100	.0860
Copper, electrolytic (N. Y.) per lb.	.1181	.1182	.1113
Lead, refined pig, desilvered (N. Y.) per lb.	.0585	.0585	.0500
Tin, Straits (N. Y.)	.5267	.5216	.5454
Zinc, prime western (St. Louis) per lb.	.0725	.0725	.0624
Brass sheets, mill	.195	.195	.185
Petroleum, crude (Kan-Okla) at wells per bbl.	1.110	1.035	.960
Gasoline, refining (Okla) per gallon	.048	.058	.049
Rayon, viscose, 150 den. first quality mm. filament per lb.	.53	.53	.53
Rubber, crude, smoked sheets (N. Y.) per lb.	.219	.230	.222
Sugar, raw 96° centrif. (N. Y.) per lb.	.035	.034	.027
Wool, territory, fine scoured per lb.	1.0750	1.0750	.8812
Woodpulp, unbl. sulphite per 100 lb.	3.46	3.46	3.34

MANUFACTURERS RECORD FOR

Million-Volt X-Ray Unit in South Produces Energy Equal to \$90,000,000 Worth of Radium

One of the first million-volt industrial x-ray units ever built is being installed by Combustion Engineering Company in its Chattanooga boiler shops.

The unit for Combustion Engineering, built by the General Electric X-Ray Corporation, exceeds by 600,000 volts the rating of the largest previous industrial units. It is capable of radiographing 8-in. steel in good commercial time and will effect a tremendous reduction in the time required for radiography of welded seams of the usual thickness required in boiler drums and other high pressure vessels. The walls of the drums for modern high pressure boilers range in thickness from about 3-in. to 5-in. or more. The new unit will radiograph 5-in. thick plate in about 5 minutes at a focal distance of 48-in., and 3-in. plate at the same focal distance can be penetrated in 48 seconds. With the 400,000-volt unit, the most practical focal distance for these thicknesses is 32 in., and at this distance the exposure time for the corresponding thicknesses are: 5-in. plate—135 min.; 3-in. plate—2½ min.

Thus a two-fold time saving will be effected—the reduction in exposure time which increases rapidly with metal thickness (more than 100 times as fast at 5½-in.) and reduction in number of negatives because of the longer focal distance which can be used. The importance of the latter results from the large number of exposures required to radiograph the seams of big drums—several hundred per boiler in some cases—and the time consumed in setting-up for each exposure. Another important advantage is the superior quality of the negatives.

The new unit is being installed in a separate building of substantial size built especially to house it. The walls are of 18-in. concrete to provide adequate protection against escape of stray x-rays. The operator's room is separated from the main part of the building by the full wall thickness. The unit itself consists of a resonant transformer within which is a coaxially-mounted, multisection, high vacuum x-ray tube, both contained in a grounded steel tank and employing compressed gas (Freon) insulation. The x-rays are generated from a target mounted in the end of an extension chamber projecting out from one end of the electrically grounded tank. The unit is rated at one million volts and 3 milliamperes continuous current. A particularly spectacular aspect is that the unit produces energy

equal to \$90,000,000 worth of radium.

The addition of this unit to the five smaller x-ray units now installed in Combustion Engineering shops will assist materially in handling the company's heavy volume of defense work.

Republic Steel Report

Republic Steel Corporation recently reported a consolidated net profit, after all charges and taxes have been deducted, of \$5,428,748 for the second quarter of 1941, as compared with \$8,189,966 for the first quarter. Higher costs, due to wage increases on April 1, higher material prices, and larger provisions for income and excess profits taxes caused the reduction in second quarter earnings. Operations were practically at full capacity in both periods.

Seaboard Railway Purchases

Purchase by the Seaboard Railway of three 5400 horsepower diesel electric freight engines, two 2000 h.p. diesel electric passenger engines, eight 1000 h.p. diesel electric switch engines, and 750 freight cars was announced recently. The freight engines each consist of four units and can be reassembled into two two-unit groups each. These purchases were made from the Electro Motive Corporation, a subsidiary of General Motors, the Baldwin Locomotive Works, the American Locomotive Company, the Pullman Standard Car Manufacturing Company, the Greenville Car Company, and the Bethlehem Steel Company.

Deliveries of this equipment will begin in the fall, and a considerable part of the orders should be filled by the time the heavy winter business begins. It is expected that the color scheme of the passenger, switcher and freight engines will conform to that already in use on the Seaboard diesel electric fleet.

Virgin Aluminum

Workmen watching as the flow of virgin aluminum starts at the new Reynolds Metals Company plant at Lesterhill in the Muscle Shoals district of Alabama. R. S. Reynolds, president of the company, has announced that more than 100,000,000 pounds of aluminum will be produced each year in the company's two plants.





Briar for pipes, formerly imported from France and Italy, is no longer available and laurel roots from the mountains of western North Carolina are taking its place. These roots range from burls of a few pounds up to 800 pounds, are dug out by mountaineers, trucked to mills where they are sawed into pipe blocks while still green and are then ready for seasoning and finishing. Thousands of these rough blocks cut from the roots shown here are being shipped away in a revival of this industry which flourished during the last war.

South Getting Lion's Share of Defense Construction

Editor, MANUFACTURERS RECORD:

It has been evident for months that the Southern states were getting the lion's share of contracts placed by the Government and so little business has been placed with construction concerns in the north central district that outright discrimination has been the rule and we are therefore not interested in considering a subscription to your publication. When one considers the broad expanse of country west of the Mississippi where thousands of acres of splendid high land available for camp sites are overlooked in order to make possible the construction of cantonments in swampy lands of Louisiana, it is to say the least a political setup of which the Administration need not be proud. Small business is begging for business and we believe it is but a question of time when small business will be out of the picture.

J. W. GATES, Vice President,
Wheeler Arnold Company.

Agrees With Editorial

Editor, MANUFACTURERS RECORD:

May I truly try to thank you for the practical, patriotic, factful frontispiece in your issue just to hand. Just suppose any and all publications had the

guts to tell that truth. What a God's pity to crucify a country like this with such senseless socialism!

JEFFERSON PENN.,

Chinquapa-Penn Plantation & Dairy.

Thousands of Homes Needed at Norfolk

Editor, MANUFACTURERS RECORD:

Naval officials and local committees are doing everything possible to remedy the acute housing shortage around Norfolk and Hampton Roads and have been successful in a partial way by getting seven thousand new houses built in the last two years, however, the housing situation seems to grow worse instead of better, as the population of Norfolk has grown in the last few years from 119,000 to 214,000.

Tourists trailers are helping out considerable but that is only a temporary measure. It is now estimated that over four thousand people are sleeping in their automobiles here and in trailers, also thousands of families are living two or three families to a single home built for only one family.

The city officials, knowing that about twenty thousand defense workers are coming into Norfolk to work in the two new shipyards, Naval Base and Navy Yard, are doing all possible to cooperate with out-of-town developers to get

them to build ten thousand more new homes and now have two operators from Atlanta building a hundred homes, one Washington developer building two hundred homes, a New York developer building a hundred homes, three Richmond developers building a hundred homes each, a Baltimore and Philadelphia syndicate are building two hundred apartment units and several other builders from Chicago and Detroit are purchasing land here to build homes or apartments but their plans have not been made public as yet.

Admiral Manly Simons, Commandant of the Norfolk Naval District, announced recently that the Navy alone has eighty-one thousand civil service and uniformed men on the payroll in this District and bringing in several thousand monthly so it can be easily seen that it is no fault of the Norfolk officials that the housing conditions became so acute here.

W. B. SHAFER, JR.,

Member Emergency Housing Committee.

Confusion Among Business Leaders

Editor, MANUFACTURERS RECORD:

I have received a copy of your July issue, and note the two editorials, It Is Happening Here, and, To Achieve Unity. May I say that I agree with everything in these two editorials. But the mere statement of these facts is not the way to accomplish the desired result.

As you say, "The need for national unity is paramount, but it cannot be achieved by mere proclamation." And then you, as a representative of business, attempt to achieve it by mere proclamation of what the President should do. Is not this too much like what you say cannot be done?

You say that the confusion in Washington is appalling. True, but is it as bad as the confusion among business leaders? I am in business, have been for some 28 years, and I have sought co-operation in business to help conditions. Frankly, after all these efforts, I am completely in the dark as to what business wants. Is there any effort on the part of the leaders of business or its associations to bring about an understanding of their purposes? If so I have been unable to find any.

If we want to stop the things which you mention in your front cover editorial, you will not accomplish it by telling the President what to do. You must join with others, like myself, who seek to bring about better relations between business and the public. Gain the confidence of the public, and the politicians will follow.

A. W. FORBES,
Forbes & Myers.

Pig Iron Capacity to Be Increased

An increase in pig iron capacity of 6,508,950 tons was recommended by OPM last month as an essential step in maintaining and increasing the production capacity of the steel industry.

Government financing of this step will be required "and is so recommended by us for the best consideration of the Defense Plant Corporation," the OPM said in a letter transmitting the proposal to Jesse Jones, the Federal Loan Administrator.

William S. Knudsen, Director General of the OPM, wrote Mr. Jones that an initial expansion of pig iron capacity was urgently required because present and prospective demand for pig iron was far in excess of capacity and the demand for scrap iron was also in excess of the available supply.

Rivers and Harbors Congress to Meet

There will be a special session of the National Rivers and Harbors Congress, called at the invitation of the Governor and other officials of the state of Florida, on November 13 and 14, 1941. The session, which will be held at Miami, has four objectives:

1. Consideration of the future program of river and harbor development, flood control, and maritime and inland navigation, with special reference to the urgent necessities of national defense.

2. Adoption of a policy for the protection and strengthening of water transportation so that the fullest possible use may be made of these facilities in the present emergency.

3. Formulation of a program in accord with President Roosevelt's proposal for a reservoir of worthwhile projects to be available when the defense effort ends in order to cushion the shock of unemployment.

4. Concerted action to insure the inclusion in the national budget of adequate funds for maintenance and construction of these projects deemed essential to the safety and defense of the nation.

Survey of Industrial Health Practices

A 76-page pamphlet entitled *Industrial Health Practices*, which is the report of a survey conducted in 2,064 industrial establishments, has been issued by the National Association of Manufacturers. This survey was conducted under the direction of Dr. Victor G. Heiser, consultant to the Association's Committee of Healthful Working Conditions.

The conclusion of the report is that health programs have very definitely proved their worth to the companies instituting them. From the reductions in various health hazards reported in the survey, it has been estimated that a health program means a net gain to the average 500-employee plant of \$5,611 a year. Only five establishments stated that they did not find their health programs paying propositions, and of these all but one included important qualifications. Occupational disease, accident frequency, labor turnover, absenteeism, and labor turnover all have been reduced by health programs.

Those plants participating in the survey listed twenty-three specific items as being important factors in an industrial program of this kind. Of these items, over seventy per cent of these plants reported having a planned program of accident prevention, exhaust ventilation for dust fumes, or gas control, a plant housekeeping and sanitation program, the maintenance of a locker room, rooms equipped for medical examinations and emergency treatment, and pre-employment physical examinations.

Single copies may be obtained from the Committee on Healthful Working Conditions, National Association of Manufacturers, 14 W. 49th St., New York City. The price is fifty cents.

Hercules Powder Production Ten Times Over Last Year

Production of smokeless powder by Hercules Powder Company is now ten times that of a year ago, the company disclosed recently when it issued its six months' financial statement. At this rate of production, the company is on or ahead of schedule with each of its various national defense construction and operating contracts.

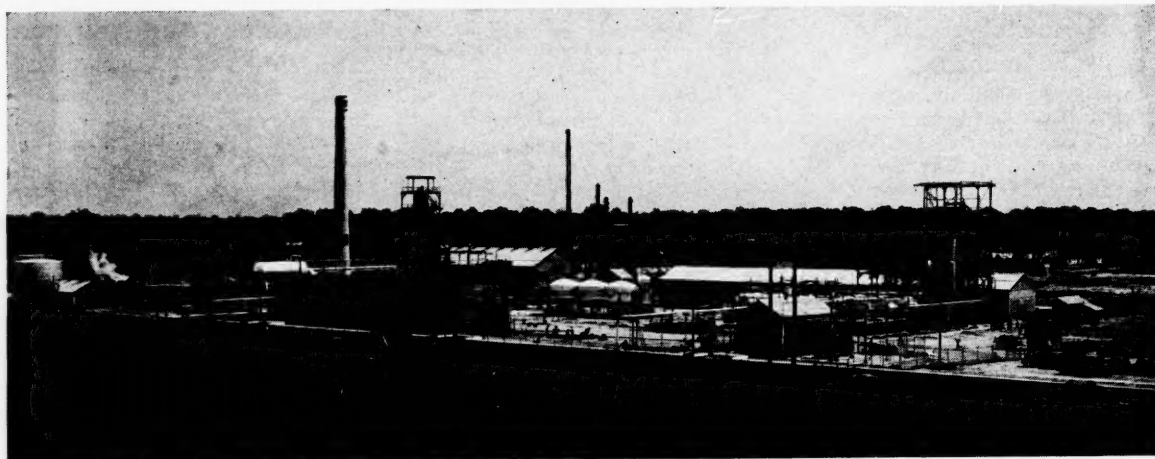
"When the additional facilities now under construction are completed in late summer or early autumn, our smokeless powder production capacity will have doubled again," Charles A. Higgins, president, said.

For the six months ended June 30, 1941, net earnings were \$2,831,189 after estimated federal taxes of \$4,715,742. This estimate of federal taxes includes a provision of \$850,000 for expected higher tax rates. After provision for such taxes, net earnings are equal, after payment of preferred dividends, to \$1.95 a share on 1,316,710 shares of common stock outstanding during the period.

"Including both our own and the government plants we operate," Mr. Higgins said, "the number of our employees has increased 50% during the past year. There are also thousands of workmen engaged in completing ordnance facilities representing plant investments of \$75,000,000."

Gearing itself to the national defense program, the Seaboard Railway is renovating old equipment in order to provide facilities for the transportation of materials to be used in the emergency. At the Seaboard's Jacksonville, Fla., shops there is much activity in rebuilding all kinds of freight cars and finding employment for 967 in the main shop and 104 in the roundhouse.





Seven Months' Contracts Near Total For All 1940

by

S. A. LAUVER

News Editor

awards pass
1½ billion
as activity
continues
during July

JULY'S \$370,899,000 construction contracts carried the total for work let this year in the sixteen Southern States almost to the level of awards for the twelve months of 1940, the record year of all time. The seven-month aggregate is \$1,523,280,000; the total for the entire year of 1940, \$1,534,350,000.

Public building headed the list of last month's awards with a total of \$201,359,000, as the Federal Government placed

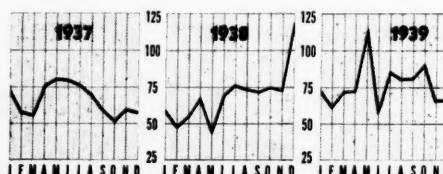
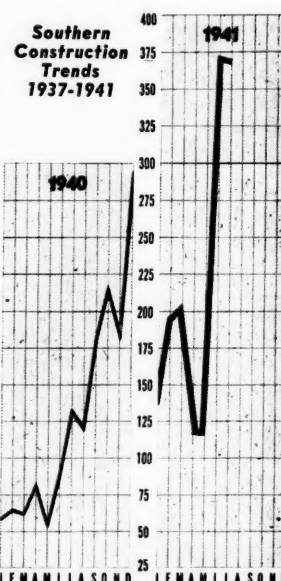
additional military construction under contract and made awards for projects to round out programs at many points where current civilian training activities are in progress.

Contracts for industrial projects ranked second. The \$104,340,000 total for this type of work, a large part of which can still be classed as Government financed, was almost five times the amount of industrial contracts for the comparable

month of 1940, when big naval base construction jobs were in the fore.

The drop in industrial contracts and

Baton Rouge, La., is rapidly becoming a chemical center as a group of synthetic rubber and chemical plants rise adjacent to the Standard Oil refinery there. The project, according to an announcement by Standard Oil officials, involves a related group of plants with a total investment to run between \$12,000,000 or \$15,000,000. Fifteen thousand tons of synthetic rubber and raw materials and 20 million gallons of alcohol will be produced annually. The synthetic rubber output will include approximately 5,000 tons of Butyl rubber annually, this to be the first commercial production of this new product. Principal rubber raw material will be butadiene, part of which is to be consumed in the Buna rubber plants of Firestone and United States Rubber companies. The new project is being built partly by Standard Oil Company of Louisiana and partly by Stone & Webster. Alcohol plants forming part of the layout will be owned by Standard Alcohol Co., a subsidiary of Standard Oil Company of New Jersey, in which National Distillers Products Corp. is also a shareholder. The work is entirely financed by the interested companies without Government assistance. A view of the Buna rubber plant is shown above.



MANUFACTURERS RECORD FOR

the rise in Government building expenditures indicated a shift in Federal expenditures from new military manufacturing plants to establishment of increased facilities for army induction and training establishments, especially the air corps.

Favorable action by Congress on the bill to provide \$320,000,000 for road construction, including \$150,000,000 for access to congested industrial and military centers, is expected to bolster activity on Southern highways, where contracts during July dropped to \$16,545,000, or about one-third below the total for the preceding month.

Privately financed building strengthened, rising twenty-five per cent above June to \$17,097,000. Private residential contracts totaling \$8,314,000, however, fell short of the amount of housing construction started with Government funds for workers in defense and related fields.

Some of the larger projects in the contract stage included:

T.N.T. and tetryl plant, Childersburg, Ala., \$25,761,820.

Cantonment, Augusta, Ga., \$23,000,000.

Ammunition loading plant, Jacksonville, Ark., \$21,297,768.

Magnesium plant, Mathieson Alkali Works, Lake Charles, \$16,000,000.

Anhydrous ammonia plant extension, Morgantown, W. Va., \$15,848,000.

Wolf Creek dam, near Jamestown, Ky., \$15,786,890.

Air Corps depot, Oklahoma City, Okla., \$14,000,000.

Shell loading plant, Wolf Creek ordnance plant and Milan storage depot, Milan, Tenn., supplemental work, \$10,791,950.

Aircraft gun turret plant, St. Louis, Mo., \$10,529,173.

Pieric acid plant, Marche, Ark., \$9,981,860.

Ordnance storage depot, Texarkana, Tex., \$9,411,827.

Single engine training school, Moultrie, Ga., \$6,009,456.

Basic flying school, Sherman, Tex., \$5,969,086.

Twin engine and bombardier flying school, Midland, Tex., \$5,000,000.

Twin flying school, Valdosta, Ga., \$4,820,500.

Flying school, Greenville, Miss., \$4,071,000.

Statistics of South's Construction

	July, 1941 Contracts Awarded	July, 1941 Contracts to be Awarded	First Seven Months, 1941 Contracts Awarded
PRIVATE BUILDING			
Assembly (Churches, Theatres, Auditoriums, Fraternal)	\$1,307,000	\$3,327,000	\$11,491,000
Commercial (Stores, Restaurants, Filling Stations, Garages)	3,105,000	1,165,000	18,027,000
Residential (Apartments, Hotels, Dwellings)	8,314,000	3,585,000	57,637,000
Office	4,371,000	515,000	10,632,000
	\$17,097,000	\$8,592,000	\$97,787,000
INDUSTRIAL	\$104,340,000	\$204,679,000	\$713,598,000
PUBLIC BUILDING			
City, County, State and Federal	\$189,264,000	\$135,639,000	\$410,005,000
Housing	9,066,000	16,970,000	79,558,000
Schools	3,089,000	4,219,000	16,395,000
	\$201,359,000	\$156,828,000	\$505,958,000
ENGINEERING			
Dams, Drainage, Earthwork, Airports ..	\$25,337,000	\$24,156,000	\$83,236,000
Federal, County, Municipal Electric	2,259,000	8,772,000	17,313,000
Sewers and Waterworks	3,962,000	17,178,000	12,098,000
	\$31,558,000	\$50,106,000	\$112,647,000
ROADS, STREETS AND BRIDGES	\$16,545,000	7,880,000	\$93,290,000
TOTAL	\$370,899,000	\$428,085,000	\$1,523,280,000

Mobilization buildings, Fort Sill, Okla., \$4,044,650.

Air gunnery school, Harlingen, Tex., \$4,000,000.

Landing gear plant, Houston, Tex., \$4,000,000.

Air field, Mission, Tex., \$3,860,000.

Office building, Mercantile National Bank, Dallas, Tex., \$3,750,000.

Buildings, Fort Belvoir, Va., \$3,599,806.

Flying school, Sherman, Tex., \$3,166,781.

Air training school, Dothan, Ala., \$3,100,000.

Air field and gunnery school cantonment, Panama City, Fla., \$2,950,577.

Naval storehouse, Norfolk, Va., \$2,300,000.

Ammunition storage facilities, Anniston, Ala., \$2,109,641.

Air corps basic training school, southeast of Sebring, Fla., \$2,000,000.

Recreational buildings, Camp Livingstone, La., \$1,988,454.

Warehouses and storage buildings, Fort Sam Houston, Tex., \$1,857,559.

Cantonment, Eglin Field, Valpariso, Fla., \$1,833,500.

Aviation mechanics school building, Wichita Falls, Tex., \$1,758,359.

Generating plant expansion, Tampa, Fla., \$1,750,000.

Army storage warehouse, Arlington, Va., \$1,640,000.

Air field work, Camp Forrest, Tenn., \$1,337,961.

Buildings, Fort Leonard Wood, Mo., \$1,250,000.

Water supply line, Key West, Fla., Naval Air Station, \$1,030,000.

Runways, Barksdale Field, Shreveport, La., \$1,020,900.

Naval Base, Sabine Pass, Tex., \$1,000,000.

Shell case plant, Port Arthur, Tex., \$1,000,000.

Public School, Washington, D. C., \$983,000.

Engine test building, Brookley Field, Mobile, Ala., \$892,690.

Motor repair facilities, Normoyle, Quartermaster Depot, San Antonio, Tex., \$888,690.

Hangars, Macdill Field, Tampa, Fla., \$861,000.

Mobilization buildings, Fort Bragg, N. C., \$858,800.

Supplementary building program, Camp Davis, N. C., \$794,594.

Wallace Lake dam, southeast of Shreveport, La., \$786,369.

Buildings, Camp Shelby, Miss., \$775,467.

Marine Corps building, Quantico, Va., \$755,500.

Arkabutla Reservoir clearing, DeSoto and Tate counties, Miss., \$694,387.

Industrial

(Including Private Utilities)

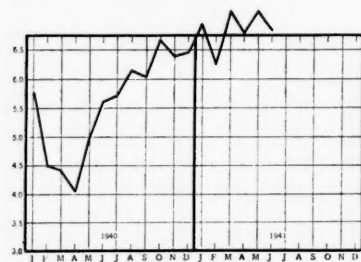
	July, 1941 Contracts Awarded	July, 1941 Contracts to be Awarded	First Seven Months 1941 Contracts Awarded
Alabama ..	\$25,761,000	\$23,070,000	\$136,027,000
Arkansas ..	10,000	38,650,000	11,562,000
Dist. of Col.	1,000,000	3,155,000	
Florida	2,239,000	436,000	6,971,000
Georgia	600,000	220,000	21,873,000
Kentucky ..	45,000	65,000	36,330,000
Louisiana ..	16,262,000	4,110,000	83,894,000
Maryland ..	3,276,000	14,413,000	29,323,000
Mississippi ..	25,002,000	8,033,000	
Missouri ..	14,451,000	31,749,000	45,129,000
N. Car.	200,000	40,600,000	14,411,000
Oklahoma ..	200,000	100,000	16,348,000
S. Car.	1,122,000	115,000	6,273,000
Tennessee ..	11,876,000	2,960,000	98,768,000
Texas	12,102,000	18,181,000	125,118,000
Virginia	123,000	3,108,000	8,350,000
W. Va.	16,073,000	750,000	62,033,000
South ..	\$104,340,000	\$204,679,000	\$713,598,000

South's Construction by States

	July, 1941 Contracts Awarded	July, 1941 Contracts to be Awarded	First Seven Months 1941 Contracts Awarded
Alabama	\$38,866,000	\$100,271,000	\$174,555,000
Arkansas	7,858,000	40,554,000	34,327,000
District of Columbia	4,524,000	8,055,000	37,871,000
Florida	19,350,000	12,878,000	69,092,000
Georgia	34,116,000	2,497,000	90,911,000
Kentucky	19,961,000	2,055,000	68,940,000
Louisiana	28,057,000	11,357,000	127,086,000
Maryland	14,740,000	32,368,000	86,219,000
Mississippi	7,622,000	30,114,000	36,910,000
Missouri	21,929,000	35,567,000	71,827,000
North Carolina	5,914,000	53,639,000	71,156,000
Oklahoma	20,030,000	17,178,000	42,947,000
South Carolina	6,617,000	8,030,000	42,647,000
Tennessee	17,097,000	5,990,000	138,117,000
Texas	88,059,000	49,014,000	282,739,000
Virginia	18,084,000	17,528,000	80,239,000
West Virginia	18,083,000	990,000	73,597,000
South	\$370,899,000	\$428,085,000	\$1,523,280,000

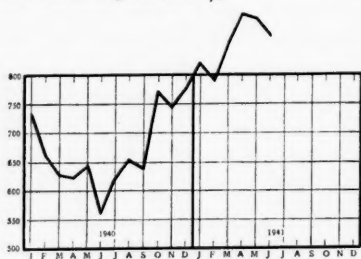
Industrial Production Trends

INDUSTRIAL production for June was 156 on the 1935-1939=100 adjusted index, the highest point yet recorded, and except for the April figure of 140, it marks a constantly rising tempo that started in April 1940 when the figure was 111. That this rise will continue there is little doubt for each month sees more factories completed and others expanded while announcements are made of further increases in plant production generally.



STEEL INGOT PRODUCTION
(Millions short tons)

Steel production in June, though not as high as May, nevertheless reached 6,800,730 tons, the operating rate of capacity being 98.2%. This latter brought the operating rate for the second quarter for this year to 98.2% and the figure for the half year to 98%.



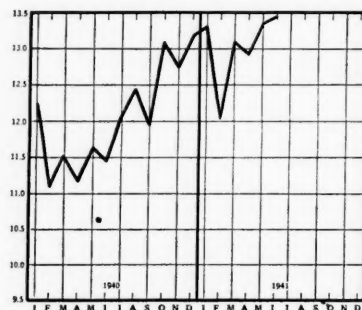
COTTON CONSUMPTION
(Thousands of bales)

Cotton consumption, which reached its highest point of 92,142 bales in April, suffered a further decline in June to 875,137 bales. This falling off in consumption is apt to lower materially the prophesied all-time high for the year.

Electric power production in June is usually inclined to fall off but this year

the figure of 13,432,475,000 kw. hrs. reverses the usual tendency, being 55,460,000 kw. hrs. greater than the May figure of 13,377,015,000 kw. hrs.

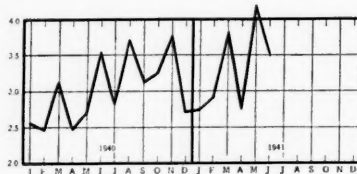
Carloadings, which reached their highest point in May with 4,161,000 cars, declined to 3,510,000 in June but this is not to be interpreted as anything more nor less than a temporary drop and the preliminary figures for July indicate that that month will be approximately the same as that of May with well over



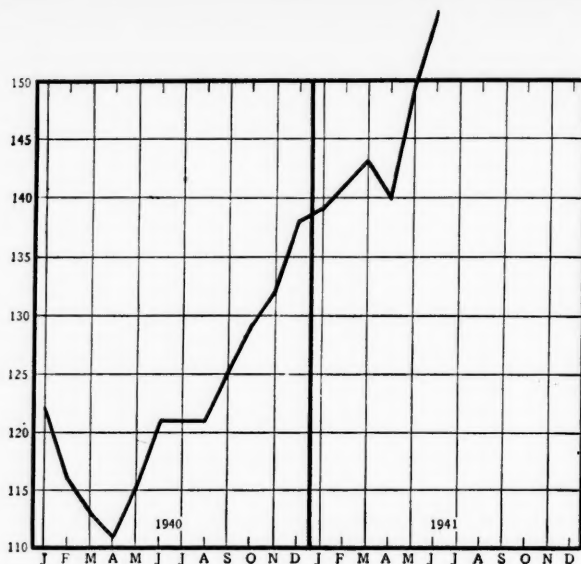
ELECTRIC POWER PRODUCTION
(Billions kilowatt hours)

four million cars.

Crude petroleum production in May amounted to 116,976,000 barrels or a daily average of 3,773,000 barrels. This compares with 111,080,000 barrels in April and a daily average of 3,703,000

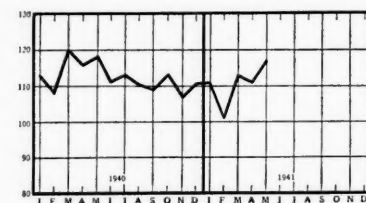


CARLOADINGS
(Millions)



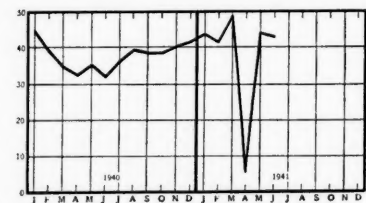
INDUSTRIAL PRODUCTION
(Index 1935-39=100)

barrels. Record-breaking crude runs to stills of 3,853,000 barrels daily as well as a jump in exports far outweighed the gain in production with stocks declining nearly 4,500,000 barrels.



CRUDE PETROLEUM PRODUCTION
(Millions of barrels)

Bituminous coal production, which should be maintaining its output or increasing it to make up for the decline in April when strikes affected production, actually suffered a decline in June, even though slight, with 43,090,000 tons



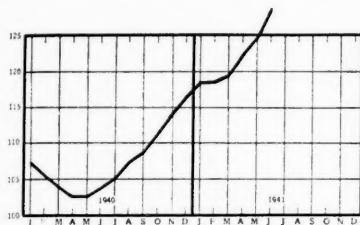
BITUMINOUS COAL PRODUCTION
(Millions of tons)

against 43,400,000 in May. However, though consumption figures for June are not yet available, those for May, amounting to 31,585,000 tons indicate a slight margin for building stocks.

Factory employment, as measured by the 1923-1925=100 adjusted index, once again set a new record with 128.4 or 3.6 above the May figure which was the

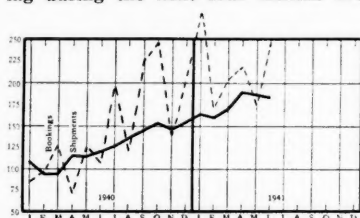
highest point of employment yet reached in the United States. Demands for labor in both industrial and agricultural regions indicate that the peak is far from reached.

Closed contracts for structural steel in June, amounting to 245,255 tons, was the second highest for this year and more than double the amount for June 1940. Total for the half year was ap-



FACTORY EMPLOYMENT
(Adjusted index, 1923-25=100)

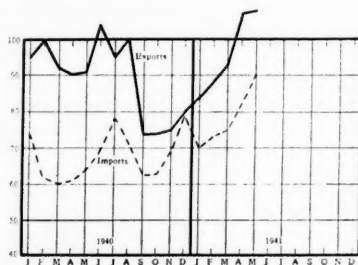
proximately double that of the corresponding period last year. Shipments of fabricated structural steel during June were slightly above the average for the first half of the year, the total for the first six months being 67% of the shipments made in the same period of 1929 and slightly more than half as much again as in the same period of 1940. Tonnages on hand for fabricating during the next four months are



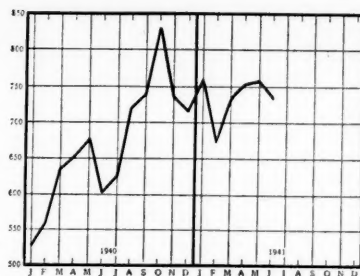
STRUCTURAL STEEL
(Thousands of tons)

747,424 tons.

Both imports and exports continue the rise that has been evident since the start of 1941, with exports on the 1923-1925=100 adjusted index registering 108 in May against 107 in April, while imports rose from 82 in April to 90 in May. As the shipping problem becomes adjusted and losses of ships in the Atlantic decline such increases are apt to



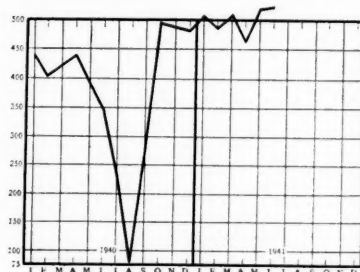
IMPORTS AND EXPORTS
(Adjusted index 1923-25=100)



SOUTHERN PINE PRODUCTION
(Million board feet)

continue.

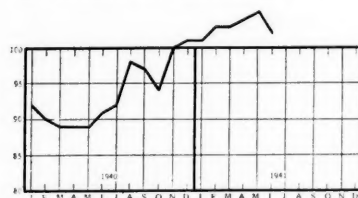
Revised figures concerning the production of southern pine indicate that the rise that started in February has continued through May when the figure reached 759 million board feet and the slight decline currently registered



AUTOMOBILE FACTORY SALES
(Thousands)

for June may be reversed when final figures are complete, though a decline in June is usual.

Factory sales of automobiles, which reached an all-time high of 518,736 in May, again broke all records with 520,521 in June and the likelihood of gasoline curtailment, together with reduced number of new auto models, has in no wise affected the demand. On the con-



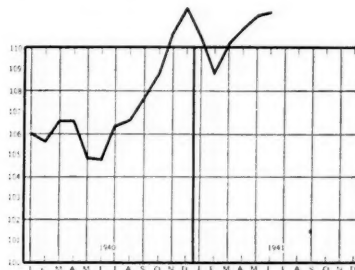
DEPARTMENT STORE SALES
(Adjusted index 1923-25=100)

trary, increased employment and higher wages are bringing forth unprecedented demands for automobiles, both new and secondhand.

Department store sales on the 1923-1925=100 adjusted index, from preliminary returns, show that for the first time since last October there is a decline, the figure being 102 against 105 in May. This should not be interpreted however as a falling-off in retail pur-

chasing but rather a leveling off, at which point it is likely to remain fairly constant.

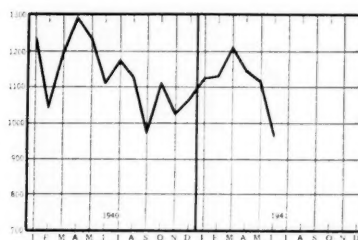
The average price of United States Treasury bonds rose once again to 111.5 as was predicted in these columns some few months ago but the likelihood of them going higher is rather small; on the other hand, no serious decline can be anticipated.



U. S. TREASURY BONDS
(Average price per \$100 bond)

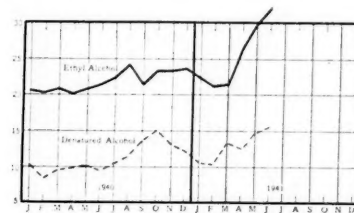
Commercial failures gratifyingly continue their downward trend, both in number as well as in liabilities, the figure for June being 970 and \$9,449,000 against 1,119 and \$10,065,000 in May. Whether this trend is likely to continue however is a matter of doubtful conjecture.

The demand for chemicals generally is increasing rapidly for, while some are












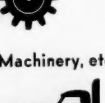

COMMERCIAL FAILURES
(Total number)

required for defense, thus causing a scarcity, others are being held at the minimum to make facilities available for other production. Reflecting chemical production generally, production of denatured and ethyl alcohol in June was 15,387,000 and 32,224,000 gallons respectively, the highest point reached with both of these commodities for many years past.



ALCOHOL PRODUCTION
(Millions of gallons)

DEFENSE PROGRAM AWARDS IN THE SOUTH BY GENERAL GROUPS IN MILLIONS OF DOLLARS

Group	Ala.	Ark.	Fla.	Ga.	Ky.	La.	Md.	Miss.	Mo.	N.C.	Okla.	S.C.	Tenn.	Tex.	Va.	W.Va.
 Construction	16.6	26.0	993.7	52.3	14.6	31.5	35.7	17.0	21.5	35.0	9.0	44.9	13.9	110.9	103.3	5.4
 New Plants	128.6	...	...	1.7	27.5	19.5	38.5	2.0	216.9	7.2	10.6	...	107.6	82.7	65.1	78.5
 Textiles & Clothes	6.8	.08	.4	14.8	.9	.8	10.8	1.9	21.8	24.8	.2	4.9	8.8	12.8	5.2	5.6
 Ordnance	10.3	...	.7	6.9	1.0	...	24.1	...	103.8	...	...	.06	5.4	9.8	26.0	.3
 Airplanes & Parts	...	...	...	...	...	...	393.5	...	98.3	...	160.7	...	3.7	448	...	...
 Ships & Parts	52.7	...	59.5	...	...	48.7	107.9	74.1	9.6	57.6	...	527.2	1.4	185.4	719.6	8.2
 Airports	1.4	.7	7.5	4.5	1.3	4.0	.5	3.6	.4	3.0	2.5	.3	.3	4.8	.9	...
 R. F. C.	3.5	.2	4.3	.07	40.0	...	1.0	.2	24.7	...	.2	.2	.02	.6	15.8	.04
 Machinery, etc.	2.1	1.8	1.0	.3	3.6	.4	16.3	...	3.9	.2	3.5	.2	.4	3.2	2.8	1.1
 Autos & Parts	.04	...	3.8	7.7	3.60045	...
 Lumber Products5	.09	1.4	.053	1.9	.2

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PRIORITIES

Mining Machinery Makers Given Blanket Rating—To facilitate the production of mining machinery and equipment, which is of crucial importance to the defense program, a limited blanket rating to about 40 manufacturers of this equipment has been issued.

The rating provided in the order is A-3 and is applicable to all deliveries of materials, which appear on the Priorities Critical List, unless a higher preference rating has been given to some particular item, in which case the higher rating may be applied. Provision is made for the extension of the A-3 rating to sub-contractors of manufacturers granted use of the order.

Calcium-Silicon Under General Preference Order—Calcium-Silicon, used for the treatment of certain high-grade steels needed for defense production, is now subject to a General Preference Order which requires consumers to file reports with their suppliers when placing orders, and states that the Director of Priorities will issue instructions for the allocation of all available supplies to customers.

Chlorine Under Full Priority—Chlorine was placed under full priority control recently in a General Preference Order. The order requires that defense orders for this important chemical be filled ahead of non-defense contracts and also stipulates that producers must accept defense orders in preference to all non-defense calls. Meanwhile, manufacturers are free to make other deliveries if they have sufficient capacity to do so after meeting defense orders.

Copper-Base Alloys Exempted—General Metals Order No. 1 has been amended to exempt from its provisions copper-base alloys in which the percentage of copper, by weight, equals or exceeds the percentage of all other metals.

The amendment was made necessary because inventory control of such copper-base alloys is already provided for in the order providing industry-wide control on copper, copper products and copper-base alloys.

New Machine Tool Regulations—Made necessary by the increasing demand for machine tools, a new plan regulating the distribution of these vitally-needed defense machines has four main objectives:

(1) To make sure that the most urgent needs are filled first.

(2) To make sure that deliveries of important machine tools, to other machine tool builders and to producers of such equipment as cranes, cutting tools, gages, micrometers and chucks, are expedited.

(3) To prevent the disturbance or dislocation of scheduled deliveries to Great Britain or other parts of the British Empire, including Canada.

(4) To minimize interference with existing delivery schedules of machine tool builders by "freezing" deliveries of certain tools for specified periods, and by providing that when tool builders receive new high-rated orders, these orders do not become mandatory until the expiration of a specified "period of grace."

One of the major instruments in the new system is a "Master Preference Numerical List" of defense contractors who have urgent need for machine tools. This list is applicable to machine tool orders only.

Contractors on this list, who have ordered machine tools, have been given preference ratings ranging from A-1-a to A-1-g which apply to their orders. But they are now also given specified "urgency standings" within their rating classes by the new list.

Cutting Tools Regulations—Following a new General Preference Order governing the use and distribution of cutting tools, major changes have been announced as follows:

(1) Cemented carbide tools are included within the definition of cutting tools.

(2) No manufacturer or distributor may accept an order for or make delivery of cutting tools unless this delivery bears a preference rating of A-10 or higher.

(3) The new order clarifies the special provisions which relate to manufacturing processes carried on during a six week's period dating from July 17, 1941.

New Priorities Field Offices Opened—Nine new offices of the Priorities Field Service have been opened at Atlanta, Cincinnati, San Francisco, St. Louis, Denver, Detroit, Cleveland, Dallas, and Pittsburgh.

Field offices have previously been opened in Boston, New York, Philadelphia, and Chicago.

The district managers may usually be located through Federal Reserve Banks in the cities named.

Chromium Under General Preference Order—Chromium has been removed from the control of General Metals Order No. 1, following the issuance of a General Preference Order which provides full priority control over chromium.

The new chromium order itself contains provisions designed to prevent the accumulation of excess inventories.

Sixteen metals and classes of metals was subjected to inventory control in General Metals Order No. 1. Copper and chromium have now both been removed, however, since they are covered by orders of their own, leaving fourteen metals and classes of metals still covered.

Aluminum Scrap Restrictions—All aluminum foundries, melters and all consumers of and dealers in aluminum scrap are being notified of the fact that aluminum scrap may not be sold to processors except when these processors have been granted preference ratings of A-10 by the Priorities Division.

The restriction on the sale of aluminum scrap to processors are contained in Supplementary Order M-1-c issued on June 10, 1941.

Only those who hold this A-10 rating, therefore, are permitted to buy scrap for processing, although the order does not restrict the sale or transfer of scrap between dealers.

A-2 Priority for Canning Machinery Manufacturers—In order to prevent loss of a portion of the 1941 fruit and vegetable crop, the Priorities Division has issued an order providing an A-2 preference rating which may be applied to deliveries of materials needed by plants constructing or repairing canning machinery and equipment.

The A-2 rating may be used only in accordance with specific instructions and regulations contained in the order (P-17).

The order provides that a producer of the canning equipment required may apply the A-2 rating to his deliveries by accepting the terms of the order in writing and serving a copy of it on his supplier. Provisions are also included whereby the rating may be used to expedite deliveries to suppliers and sub-suppliers of the producer.

The order is a temporary one, expiring on the 31st day of August, 1941.

About 35 producers of machinery and equipment are on the initial list of those who will receive the order. All of them are urged not to use critical materials such as aluminum, or stainless steel containing nickel, if substitutes can be used.

August Zinc Pool—Under the emergency zinc pool terms producers of metallic zinc will set aside for August an amount equal to 27% of June production. This will amount to approximately 19,000 tons. The pool for July was 22% of May production.

Producers of zinc oxide will set aside an amount equal to 10% of June production which will amount to approximately 1,714 tons.

Producers of zinc dust are not required to set aside any part of their production.

Crane and Hoist Manufacturers Given Blanket Preference—To assure the prompt production of cranes and hoists which are vital to manufacturing plants engaged on Army, Navy and other defense projects, a new limited blanket preference rating has been issued to about 75 producers of this equipment.

The new order is P-5-a. It takes the place of order P-5, which expired on July 31, and expands the list of materials to deliveries of which the rating may be applied.

The 75 producers granted the order are permitted to apply a rating of A-1-a to deliveries of the specified materials. Provisions are included so that the producers' suppliers and sub-suppliers may apply the rating to deliveries from their own subcontractors.

Compliance Section Established—Creation of a Compliance Section within the Priorities Division to investigate and take appropriate action in cases involving non-compliance or violation of priority orders has been announced.

Efforts will be made to obtain voluntary compliance in all cases, but punitive action can and will be taken if necessary, so that the great majority of producers, who cooperate freely and willingly, will not be penalized by the unfair activities of a few who refuse to cooperate.

It is believed that a careful explanation of the purposes and requirements of the provisions to be complied with will settle the average case. There will be, however, some recalcitrants and others who will continue to display will-

(Continued on page 44)

National Defense Program Awards in the South¹

ALABAMA

Value of Total Awards July 1, 1940
to July 15, 1941

Army Contracts	\$144,204,315
Navy Contracts	34,031,803
U. S. Maritime Commission	
Emergency Ship Program	20,822,500
Civil Aeronautics Admin. (Commerce) (Airport Expansion Program)	116,200
W. P. A. Defense Projects (F. W. A.)	3,073,046
U. S. H. A. Defense Housing Projects (F. W. A.)	2,787,553
Public Buildings Admin. Def. Housing (F. W. A.)	1,409,000
Office of Education Defense Training (F. S. A.)	1,079,911
National Youth Administration (F. S. A.) (Defense Training Funds for 1941)	1,353,688
Defense Plant Corporation (F. L. A.)	9,801,211
Reconstruction Finance Corporation (F. L. A.)	19,068,188

The Dunn Construction Company, Birmingham, and John S. Hodgson & Company, Montgomery, have been awarded a contract by the Ordnance Division of the Army, covering supplemental agreements for the construction of the Anniston Ordnance Depot; estimated cost \$2,109,640. J. B. Converse & Co., Mobile, and A. C. Polk are in charge of the architectural and engineering services.

CONTRACTS AWARDED JUNE 16 TO JULY 15

Quartermaster Corps (Army)	
Alabama Institute for the Deaf & Blind, Talladega, 10,000 Cotton pillowcases, \$2,325.	
Yarn & Grey Goods Mill: Lincoln Mills of Alabama, Huntsville, 2,350,000 cotton tent duck, \$634,509.	
Tallassee Mills, Tallassee, 713,000 yds. cotton tent duck, \$202,136.	
Grey Goods Mill, West Point Mfg. Co., Langdale, 700,000 yds. cotton tent duck, \$192,990.	
Nashua Mfg. Co., Lanett, 500,000 herringbone twill cotton cloth, \$157,400.	
Corps of Engineers (Army)	
McGowin-Lyons Hardware & Supply Co., Mobile, cast iron pipe, Brookley Field, Mobile, \$2,320.	
Shearman Concrete Pipe Co., Montgomery, concrete drainage pipe, Gunter Field, Montgomery, \$9,962.	
Smith-Kelly Supply Co., Inc., Mobile, asbestos cement duct, Brookley Field, Mobile, \$2,023.	
Markham Products Co., Birmingham, shores and jacks, \$19,375.	

Silas Mason Company, New York, has been commissioned by the Ordnance Division of the Army to construct, equip and operate a shell-loading plant at Minden, Louisiana, as well as train key personnel for same. The estimated cost, including architectural engineering, services is \$19,356,908.

Ordnance (Army)

Lanett Bleachery, Lanett, cotton cloth, \$295,155.	
Gardiner-Warring Co., Inc., Florence, 1,000,000 cotton undershirts, \$168,851.	
Stockham Pipe Fittings Co., Birmingham, grenades, \$155,099.	
Bureau of Ships (Navy)	
Mt. Vernon-Woodberry Mills, Inc., Columbia, S. Car. (Manufacturers: Columbia Mills, Columbia, S. Car. and Tallassee Mills, Tallassee), canvas, cotton, \$258,388.	

ARKANSAS

Value of Total Awards July 1, 1940
to July 15, 1941

Army Contracts	\$26,242,320
W. P. A. Defense Projects (F. W. A.)	2,342,364

Office of Education Defense Training (F. S. A.)	601,755
National Youth Administration (F. S. A.) (Defense Training Funds for 1941)	911,673
Reconstruction Finance Corporation (F. L. A.)	151,845

Fruin-Colnon Construction Company and Fruco Construction Co., St. Louis, have been awarded supplemental agreements to fixed-fee contracts by the Ordnance Division of the Army in order to expand production facilities at the small arms ammunition plant, St. Louis Ordnance Depot, at a total cost of \$59,199,559. \$33,999,559 is to cover cost of construction and \$25,200,000 is for equipment and machinery. Mauran, Russell, Crowell & Millgardt, St. Louis, and Giffels & Vallet, Inc., Detroit, Michigan, are in charge of architectural and engineering services, and the plant is to be operated by the United States Cartridge Company of Baltimore, Maryland.

CONTRACTS AWARDED JUNE 16 TO JULY 15

Quartermaster Corps (Army)	
R. Poe Crigler, Calico Rock, 2,000 tent pins, \$840.	
Berry Dry Goods Co., Little Rock, 35,000 khaki cotton trousers, \$23,000.	
Buford Bracy, Little Rock, 501 tent frames, \$12,700.	

FLORIDA

Value of Total Awards July 1, 1940
to July 15, 1941

Army Contracts	\$27,890,599
Navy Contracts	92,256,763
Civil Aeronautics Admin. (Commerce) (Airport Expansion Program)	439,200
W. P. A. Defense Projects (F. W. A.)	15,891,907
U. S. H. A. Defense Housing Projects (F. W. A.)	2,064,461
Public Buildings Admin., Def. Housing (F. W. A.)	2,580,700
Office of Education Defense Training (F. S. A.)	809,456
National Youth Administration (F. S. A.) (Defense Training Funds for 1941)	706,311
Reconstruction Finance Corporation (F. L. A.)	4,254,485
Defense Plant Corporation	81,650

CONTRACTS AWARDED JUNE 16 TO JULY 15

Corps of Engineers (Army)	
Peerless Bread Machinery Corporation, Sidney, Ohio, dough mixers, Eglin Field, Valpariso, \$2,062.	
Pan American Petroleum Corp., Tallahassee, cut-back asphalt, Eglin Field, Valpariso, \$107,640.	
Aqua Systems, Inc., New York, N. Y., construction of A. C. Gasoline fueling system, MacDill Field, Tampa, \$99,307.	
Aqua Systems, Inc., New York, N. Y., construction of A. C. Gasoline fueling system, Eglin Field, Valpariso, \$79,253.	
J. R. Hime Electric Co., Palm Beach, construction of airport lighting system, Melbourne-Eau Gallie Airport, Brevard County, \$17,853.	

Tycoon Tackle, Inc., Miami, Florida, have received an authorization from the Defense Plant Corporation of \$81,650 to construct and equip a plant for the manufacture of precision instruments needed by the aircraft industry.

¹ Secretary of the Navy, Frank Knox announced June 4, 1941, that in the interests of security, press releases concerning contracts between the Navy Department and individual contractors will be discontinued. Information regarding contracts will be available to persons having legitimate business with the Navy Department and such information may be obtained from the Bureau issuing the contracts.

Ordnance (Army)

Metal Products Corp., Miami, fuzes, \$140,600.	
Bureau of Ships (Navy)	
Tampa Shipbuilding Co., Inc., Tampa, ship hulls, \$18,159,117.	
Belcher Oil Co., Miami, fuel oil, \$69,494.	

GEORGIA

Value of Total Awards July 1, 1940
to July 15, 1941

Army Contracts	\$63,167,130
Navy Contracts	3,659,236
W. P. A. Defense Projects (F. W. A.)	5,367,846
U. S. H. A. Defense Housing Projects (F. W. A.)	2,627,833
Public Buildings Admin., Def. Housing (F. W. A.)	2,452,500
Office of Education Defense Training (F. S. A.)	1,184,434
National Youth Administration (F. S. A.) (Defense Training Funds for 1941)	1,509,167
Reconstruction Finance Corporation (F. L. A.)	68,701

Russ-Mitchel, Inc., T. B. Hubbard Construction Company, Knutson Construction Company and Joseph F. Meyer, Jr., all of Houston, have been awarded a Defense Plant Corporation contract for the construction of a shipping terminal at Houston to cost \$7,566,517. Lockwood & Andrews and Davis M. Duller, Houston, are in charge of architectural and engineering services.

CONTRACTS AWARDED JUNE 16 TO JULY 15

Quartermaster Corps (Army)	
Scottdale Mills, Scottdale, 1,200,000 yds. cotton tent duck, \$357,960.	
Grey Goods Mill: Washington Mfg. Co., Tennille, 402,500 cotton tent duck, \$79,876.	
Yarn & Grey Goods Mill: Dixie Cotton Mills, LaGrange, 411,000 cotton tent duck, \$140,357.	
Golden City Hosiery Mills, Inc., Villa Rica, 200,000 prs. tan cotton socks, \$26,900.	
Richmond Hosiery Mills, Roseville, 200,000 prs. tan cotton socks, \$26,940.	
Washington Mfg. Co., Tennille, 100,000 yds. cotton tent duck, \$18,400.	
Peerless Woolen Mills, Rossville, 25,000 wool blankets, \$167,500.	
Eagle & Phenix Mills, Columbus, 1,000,000 yds. cotton cloth, \$324,800.	
Carwood Mfg. Co., Winder, 200,000 woolen serge trousers, \$150,000.	
The Dixie Cotton Mills, New York, N. Y. (Factory at LaGrange), 182,000 yds. cotton tent duck, \$66,792.	
Supplies & Accounts (Navy)	
Colonial Bunker Oil Co., Savannah, fuel oil, \$75,000.	
Ordnance (Army)	
Babcock & Wilcox Plant, Augusta, bricks, \$15,248.	

E. I. duPont de Nemours & Company, Wilmington, Delaware, have been granted supplement to original fixed-fee contract by the Ordnance Division of the Army, amounting to \$15,848,000, in order to increase production capacity of the plant owned and operated by duPont at the Morgantown Ordnance Works, Morgantown, West Virginia.

KENTUCKY

Value of Total Awards July 1, 1940
to July 15, 1941

Army Contracts	\$35,853,539
Navy Contracts	9,423,164
Civil Aeronautics Admin. (Commerce) (Airport Expansion Program)	16,000
W. P. A. Defense Projects (F. W. A.)	2,822,422
Public Buildings Admin., Def. Housing (F. W. A.)	2,753,000

Office of Education Defense Training (F. S. A.)	844,690
National Youth Administration (F. S. A.) (Defense Training Funds for 1941)	1,176,668
Defense Plant Corporation (F. L. A.)	2,920,580
Reconstruction Finance Corporation (F. L. A.)	40,100,000

CONTRACTS AWARDED JUNE 16 TO JULY 15

Quartermaster Corps (Army)	
Wheeling Corrugating Co., Louisville, 42 shields and waterheater cases, \$105.	
Air Corps (Army)	
Standard Oil Co. of Kentucky, Louisville, gasoline and oil, \$215,475.	
Reynolds Metals Co., Louisville, aluminum alloy, \$292,857.	

Frazer-Brau Engineering Company, Inc., New York, has received a supplemental agreement to original fixed-fee contract from the Ordnance Division of the Army for additional facilities at the Weldon Springs Ordnance Works, Missouri, at an estimated cost of \$14,131,060. This plant, where TNT and DNT is manufactured, is to be operated by the Atlas Powder Company.

Corps of Engineers (Army)	
McClure Hoke Co., Buchel, crushed limestone, Bowman Field, Louisville, \$3,536.	
Ordnance (Army)	
Reynolds Metals Co., Louisville, aluminum powder, \$4,050.	
Belknap Hardware & Mfg. Co., Inc., Louisville, machinist hammers, \$1,031.	
Signal Corps (Army)	
Ken-Rad Tube & Lamp Co., Owensboro, Radio tubes, \$3,459.	

LOUISIANA

Value of Total Awards July 1, 1940 to July 15, 1941

Army Contracts	\$50,106,207
Navy Contracts	5,209,960
U. S. Maritime Commission Emergency Ship Program	42,341,000
Civil Aeronautics Admin. (Commerce) (Airport Expansion Program)	340,000
W. P. A. Defense Projects (F. W. A.)	6,686,265

E. I. duPont de Nemours and Company, Wilmington, Delaware, has been awarded a contract by the Ordnance Department of the Army at \$25,761,820 to increase the manufacturing facilities of TNT, DNT and Tetrayl at the Alabama Ordnance Works, Sylacauga, Alabama. The estimated cost of construction is \$14,871,820 while the remaining \$10,890,000 is to cover the cost of equipment.

Public Buildings Admin., Def. Housing (F. W. A.)	1,695,000
Office of Education Defense Training (F. S. A.)	697,846
National Youth Administration (F. S. A.) (Defense Training Funds for 1941)	1,053,579
Defense Plant Corporation (F. L. A.)	125,000

CONTRACTS AWARDED JUNE 16 TO JULY 15

Quartermaster Corps (Army)	
Rex Mfg. Co., Inc., New Orleans, 100,000 khaki cotton trousers, \$68,000.	
Equitable Equipment Co., Inc., New Orleans, steel cargo vessels, \$879,000.	

Hughes Tool Company of Houston has received an award of \$3,725,001 from the Defense Plant Corporation for the construction and equipping of a plant to manufacture aircraft parts.

The value of all defense contracts awarded by the Army and Navy Departments up 'til May 15 totaled \$15,716,125,853. Of this amount \$3,506,642,288 or over 22% has gone to plants in the Southern states. The latter figure is based upon the state to which the order is given and does not take into account the large amount of defense work being done in southern plants whose head office is located outside the South.

Equitable Equipment Co., New Orleans, water barge, \$16,800.	
Friedrichs Wood Specialties, New Orleans, 250 folding camp tables, \$870.	
Equitable Equipment Co., Inc., New Orleans, steel barges, \$154,400.	
Equitable Equipment Co., New Orleans, 4 seagoing, coastwise and steel harbor tugs, \$690,000.	

Corps of Engineers (Army)

Aqua Systems, Inc., New York, N. Y., construction of A. C. gasoline storage and dispensing system, Baton Rouge Airbase, \$99,762.	
The Chicago, Rock Island & Pacific Railway Co., Lecompte, steel rail, angle bars and tie plates, \$187,113.	
Supplies & Accounts (Navy)	
Standard Oil Co. of Louisiana, New Orleans, oil, Navy, \$291,200.	

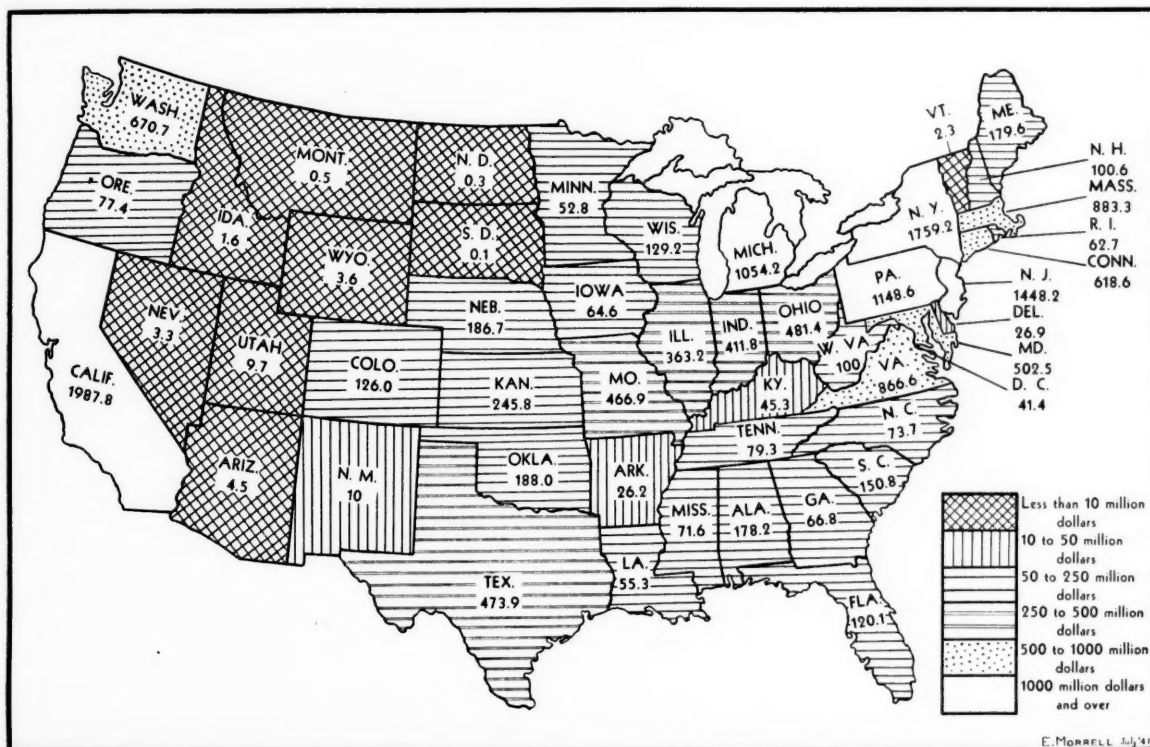
H. K. Ferguson Company, Cleveland, Ohio, and Oman Construction Company, Nashville, have been granted supplemental agreements totaling \$10,791,950 by the Ordnance Division of the Army for shell-loading facilities and an ammunition storage depot at the Wolfe Creek Ordnance Plant and Milan Storage Plant, Milan, Tennessee.

MARYLAND

Value of Total Awards July 1, 1940 to July 15, 1941

Army Contracts	\$370,405,368
Navy Contracts	132,131,098
U. S. Maritime Commission Emergency Ship Program	104,747,375
Farm Security Admin. (Agr.) (Defense Housing)	746,067
W. P. A. Defense Projects (F. W. A.)	5,422,247
U. S. H. A. Defense Housing Projects (F. W. A.)	1,230,546
Public Buildings Admin., Def. Housing (F. W. A.)	6,238,739
Office of Education Defense Training (F. S. A.)	1,040,895
National Youth Administration (F. S. A.) (Defense Training Funds for 1941)	733,634
Defense Plant Corporation (F. L. A.)	1,886,415

(Continued on page 52)



Important New Industrial Plants and Expansions in the South During July

ALABAMA

ALABAMA CITY—elevator—Georgia Sprinkler Co., Atlanta, Ga. has contract for inside and outside fire protection installation at plant addition of Dwight Manufacturing Co.; General Elevator Co., Atlanta, Ga., has contract for freight elevators; addition started in March will contain 20,000 spindles with all preparatory and weaving equipment; estimated cost to exceed \$3,000,000; J. E. Sirrine & Co., Greenville, S. C., Engineers; Daniel Construction Co., 824 7th Ave., S., Birmingham, general contractor.

CHILDERSBURG—ordnance works—War Dept. let contract at \$25,761,820 to E. I. du Pont de Nemours & Co., Wilmington, Del. for construction and equipment of Alabama Ordnance Works; manufacture TNT and tetryl.

ARKANSAS

JACKSONVILLE—ammunition loading plant—Ford, Bacon & Davis, 39 Broadway, N. Y. awarded contract by War Dept. at \$21,297,768 to construct plant; work to start at once.

MARCHE—picrate plant—War Dept. approved an \$8,554,000 subcontract to Lummus Co., 420 Lexington Ave., New York City, for designing, constructing buildings and installing equipment and machinery of Mammelle Ordnance Works; department will erect an ammonium picrate plant for manufacture of picric acid, used in manufacture of shells; Cities Service Defense Corp., New York City, has prime contract to include operation, management service during construction, and training of personnel; machinery and equipment to cost \$3,553,420.

FLORIDA

MIAMI—plumbing and electric work—Intercontinent Aircraft Corp., William D. Pawley, Chairman of Board, c/o Paul Scott, Atty., Ingraham Bldg., let electrical contract to Wagner Electric Co., 2377 S. W. 24th Terrace; and received low bid from Aeme Plumbing Co., 1002 5th St., Miami Beach, for plumbing contract for the building #9, N. W. 36th St. and 45th Ave., Dade County; Archt.

MIAMI—precision instrument plant—Defense Plant Corp. a subsidiary of RFC, at request of Navy Dept., authorized execution of a lease agreement with Tycoon Tackle, Inc., Miami, to provide for construction and equipping plant at cost of \$81,650, for manufacture of precision instruments for aircraft industry; plant to be operated by Tycoon Tackle, Inc.

TAMPA—addition—American Can Co., Charles E. Cummings, Supt., let contract to G. A. Hanson Co., Inc., First National Bank Bldg., to erect \$90,000 addition to plant at First Ave. and 22nd St., to increase shipping

Contracts Awarded

GEORGIA

ATLANTA—addition—Campbell-Laurie & Lautermilch Co., 400 W. Madison Ave., Chicago, Ill., received contract for constructing addition to plant of Kraft Phenix Cheese Co., Fair St. and A. & W.P. Railway; 3-story and basement; brick and concrete.

COLUMBUS—alterations—Eagle & Phenix Mills, let contract to Williams Lumber Co., for construction of 4-story addition and alterations to present building; J. E. Sirrine & Co., Greenville, S. C., Engineers; reinforced concrete; brick walls; metal doors.

KENTUCKY

Dam materials—War Department let following contracts for materials and construction of Wolf Creek Dam on Cumberland River in Kentucky at cost of \$18,600,000; Louisville Cement Co., Louisville, Ky., at \$1,093,920 for Portland cement; Alpha Portland Cement Co., Easton, Pa., at \$1,710,200 for Portland cement; S. A. Healy Co., White Plains, New York, has general contract at \$15,803,000 for construction of concrete and earth dam with appurtenances.

LOUISIANA

Pipe line—Plantation Pipe Line Co., Atlanta, Ga., let contract to Latex Construction Co., Oil & Gas Bldg., Houston, Tex., for construction of section of main pipe line extending from Baton Rouge to Mississippi-Alabama state line; to Oklahoma Contracting Co., 1515 Magnolia Bldg., Dallas, Tex., for section of main line from Mississippi-Alabama State line to Alabama-Georgia state line; Williams Brothers Corp., National Bank of Tulsa Bldg., Tulsa, Okla., for main line construction from Alabama state line to Greensboro, N. C. the terminus, also received contract for lateral lines from Bremen, Ga. to Chattanooga and Knoxville, Tenn.; award of contract for constructing lateral lines serving Columbus and Macon, Ga. and Birmingham, Ala. and Montgomery, Ala. were deferred until a later date; estimated cost \$20,000,000; estimated cost of the 4 contracts \$3,500,000; tank farms will be established at Belton and Spartanburg, S. C. and Charlotte, Salisbury and Greensboro, N. C.

BATON ROUGE—synthetic rubber plant—Standard Oil Development Co., Linden, N. J., and 26 Broadway, New York, have begun construction of a group of new synthetic rubber and chemical plants adjoining refinery at Baton Rouge; project will involve related group of plants at this location, total investment estimated at \$12,000,000; will be produced in the new plants 15,000 tons per annum of synthetic rubber products and raw materials and 20,000,000 gallons per annum of alcohols; synthetic rubber production will include approximately 5,000 tons per annum of Butyl rubber; principal rubber raw material produced will be butadiene which is expected to be used in part for Buna rubber plants of Firestone and U. S. Rubber companies; new project will be constructed partly by Standard Oil Co. of Louisiana and partly by Stone & Webster; alcohol plants forming a part of the project will be owned by Standard Alcohol Co., a subsidiary of Standard Oil Co., N. J., in which National Distillers Products Corp. is a shareholder.

LAKE CHARLES—magnesium plant—M. W. Kellogg Co., 225 Broadway, New York, received contract for erecting \$16,000,000 magnesium plant for Mathison Alkali Co., 60 E. 42nd St., New York.

STERLINGTON—ammonia plant—M. W. Kellogg Co., 225 Broadway, New York, has contract to construct an anhydrous ammonia plant near Sterlington for Government; cost \$16,750,000; ammonia will be manufactured from hydrogen recovered from natural gas waste.

MARYLAND

BALTIMORE—gas pumping station—Consolidated Gas Electric Light & Power Co., let contract to F. D. Carozza, 2444 N. Charles St., for a gas pumping station, Charles Street Ave., Baltimore County; brick; 1-story; private plans.

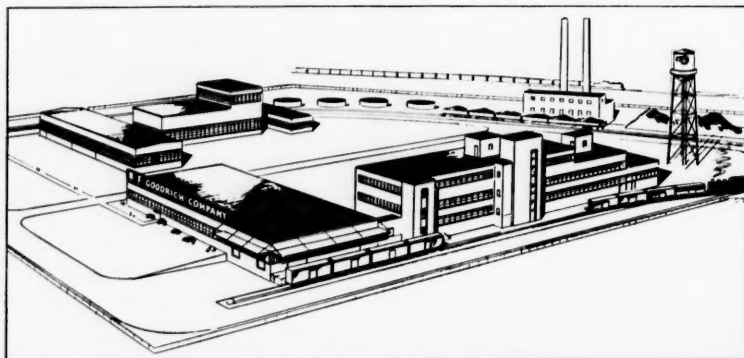
MISSISSIPPI

FLORA—ammunition loading plant—S. & W. Construction Co., Shrine Bldg., Memphis, Tenn., associated with Charles Weaver Construction Co., Inc., Tower Bldg., Jackson, Miss. and Eastern Construction Co., Winston-Salem, N. C., have contract for erecting \$15,000,000 ammunition bag-loading plant on 6000 acre site in Madison County; plant will be owned by Government and operated by General Tire & Rubber Co., 250 Monroe Ave., Memphis, Tenn.

MISSOURI

ST. LOUIS—aircraft parts—St. Louis Car Co., 8000 N. Broadway, starting work on storage and aircraft parts manufacturing plant, 600 Bittner St.; brick and steel; 1-story; 232x162, 300x240 and 80x232 ft.; cost \$100,000; owner builds.

ST. LOUIS—expansion—War Dept. granted to Fruin Colnon Construction Co. and Fruco Construction Co., general con-



Architect's sketch of B. F. Goodrich Company's new plant for the manufacture of Koroseal synthetic material now under construction at Louisville, Ky. The entire output of this plant will be used for national defense. Albert Kahn, Detroit, Mich., is architect and the Batson-Cook Co., West Point, Ga., is general contractor.

tractors for small arms ammunition plant, supplemental agreements to fixed-fee contracts for expansion of production facilities; total estimated cost of \$59,199,559 of which \$33,999,559 is for construction, remainder for machinery and equipment; expansion bring total estimated cost of plant to \$89,526,149 of which \$47,331,148 is for construction, remainder for equipment and machinery; plant is to be operated by United States Cartridge Co., Baltimore, Md.

WELDON SPRINGS—TNT plant—War Dept. granted to Frazer-Brace Engineering Co., Inc., New York, supplemental agreements to original fixed-fee contract for additional facilities for manufacture of TNT and DNT at Weldon Springs, \$14,131,000; will be operated by Atlas Powder Co.; total estimated cost \$25,455,760.

TENNESSEE

MEMPHIS—plant — International Cotton Products Co., Chicago, Ill., let contract to S. Malkin & Co. 160 Union, for \$200,000 plant, Riverside Drive between Olive and Trigg; 2-story; 230x360 ft.; Harker & Heyer, Commerce Title Bldg., Archts.; following were awarded subcontracts: electrical wiring, Dawkins Electric Co., 26 N. 2nd St.; heating, Hughes Heating Co., 672 Madison; plumbing, Pritchard Brothers, 433 Madison; elevator equipment, Memphis Elevator Co., 261 Court Ave.; fire equipment, Texas Automatic Sprinkler Co., 325 W. Trigg Ave.

MEMPHIS — additional lines — Memphis Natural Gas Co., Sterick Bldg., constructing 55 miles of gas line parallel to present carrying system, from fields in Louisiana to city's pumping system; plans call for extension to Walls, Miss., 13 miles southward; extension 9 miles south from Merigold and addition of 10 miles from Mississippi River in Arkansas in addition to the duplication of 23 miles from Gallion, La. to gas field terminal; will expend \$850,000 this year.

MILAN—ordnance plant addition—H. K. Ferguson Co., Hanna Bldg., Cleveland, Ohio, will construct the \$5,335,000 addition to Wolf Creek Ordnance plant for War Department to be operated by Procter & Gamble Defense Corp., Gwynne Bldg., Cincinnati, Ohio.

MILAN—shell loading facilities—War Department granted to H. K. Ferguson, Cleveland, O., and Oman Construction Co., Nashville, Tenn., supplemental agreement to original contracts for shell loading facilities at Wolf Creek ordnance plant and Milan storage depot, Milan, \$10,791,950.

TEXAS

Shell Cases—Texastool Manufacturing Co., A. J. Armstrong, Vice-President, 3909 Hemp-

hill St., Fort Worth, is expanding plant at Fort Worth for manufacture of shell cases and shell forgings for Army and Navy; will erect new \$1,000,000 plant at Port Arthur to provide capacity for producing completed shell cases and shell forgings; Port Arthur plant will be equipped primarily for producing ammunition of a larger size than that manufactured at Fort Worth; will be erected on a 250-acre site on the Intracoastal Canal, to be served by two railways; H. E. Beyster Corp., Detroit, Mich., has been employed to design and build plant buildings and install furnace shop equipment.

CORPUS CHRISTI—zinc refining plant—American Smelting & Refining Co., 120 Broadway, New York, let contract to James Stewart & Co., 230 Park Ave., New York, for erection of electrolytic zinc refining plant on Nueces Bay; cost \$5,200,000; will include 4 buildings, office and laboratory, shop and warehouse.

HOUSTON—landing gears—Southwestern Construction Co., 3802 Calhoun St., started work on construction of plant for manufacture of landing gears for bombers, for Defense Plants Corp., to be leased and operated by Hughes Tool Co., 300 Hughes St.; will cover 30 acres and consist of 9 buildings, 5 of which are now on site; erect 4 buildings of wood frame; estimated cost \$4,000,000; Robert J. Cummins, Bankers Mortgage Bldg.

TEXARKANA—bomb unit — Lone Star Defense Corp., organized as a subsidiary of B. F. Goodrich Co., 400 S. Main St., Akron, Ohio, to construct and operate a \$35,000,000 Government ordnance plant to be established near Texarkana on tract of 24,300 acres; work to be started at once; C. E. Jones, now

company's plant engineer at Oaks, Pa. will be chief engineer for the defense corporation; Prack and Prack and Chester Engineers of Pittsburgh, Pa. will be architect-engineers; Winston Brothers Co., Minneapolis, Minn.; C. F. Haglin Sons Co., Minneapolis, Minn.; Missouri Valley Bridge & Iron Co., Leavenworth, Kans.; and Sollitt Construction Co. of South Bend, Ind., have been awarded contracts as construction contractors.

WILLOW SPRINGS—recycling plant — Lone Star Gasoline Co., R. Lacy, Longview, and associates, erecting recycling plant near Willow Springs; capacity 50,000,000 cu. ft. of gas daily; install 1300 h.p. for driving gas compressors to inject gas returned to producing formation; plant was designed by company personnel.

VIRGINIA

RADFORD—ordnance works — Mason & Hanger Co., 6 Valley St., Pulaski, has contract for extension Radford Ordnance Works; recently acquired 1200 acres in Horseshoe area near Cowan in Pulaski County; will be operated by Hercules Powder Co., Wilmington, Del.

WEST VIRGINIA

MORGANTOWN—ammonia plant expansion—War Department announced a supplement agreement with E. I. duPont de Nemours & Co., Wilmington, Del. to original contract for construction of an anhydrous ammonia plant at Morgantown ordnance works, \$15,848,000, making total cost \$31,448,000, of which \$20,700,000 is for equipment.

Contracts Proposed

ALABAMA

ATTALLA — shell manufacture — Falls Spring & Wire Co., 8635 Conant St., Detroit, Mich., acquired plant of Compress Buckle Co.; install machinery for manufacture of shell.

BIRMINGHAM — expansion — Republic Steel Corp., reported, considering a major expansion program to include reopening of Shannon ore mine, building new blast furnace at Thomas, development of new coal mine, construction of additional by-product coke ovens.

HUNTSVILLE—ordnance assembly plant — War Dept. announced selection of Huntsville for an ordnance assembly plant to be

(Continued on page 54)



Defense Plant Expansion Exceeds \$3,000,000,000

Commitments for defense plant expansion at the end of May had risen to a total of \$3,061 million covering 1,847 projects, according to the Bureau of Research and Statistics, Office of Production Management. In addition, application had been made for Certificates of Necessity on plant facilities totaling \$281 million, upon which action had not been taken, bringing the total to \$3,342 million. Government obligations comprise 75 percent of the money allocated and 22 percent of the projects in this tabulation. This does not include private projects for which Certificates of Necessity have not been requested.

Government commitments as of May 31 cover 397 projects estimated to cost \$2,291 million while private commitments at the same date cover 1,450 plants estimated to cost \$770 million. Of the total Government commitments \$927 million represents the share of the Army and \$730 million represents the Navy's commitments. The Defense Plant Corporation has committed itself for \$505 million. Other Government

commitments total \$129 million.

GOVERNMENT-FINANCED DEFENSE INDUSTRIAL FACILITIES OF \$25,000 AND OVER

Through May 31, 1941

State	Amount
GRAND TOTAL	\$2,290,851,390
Alabama	102,466,009
District of Columbia	8,480,114
Florida	2,255,800
Georgia	4,575,765
Kentucky	28,078,914
Louisiana	6,119,775
Maryland	66,231,361
Mississippi	1,936,000
Missouri	120,705,189
North Carolina	7,632,000
Oklahoma	16,266,280
South Carolina	13,319,632
Tennessee	57,811,346
Texas	78,720,265
Virginia	117,087,658
West Virginia	75,982,020
TOTAL SOUTH	\$707,589,128

DEFENSE INDUSTRIAL FACILITIES VALUE OF INDUSTRIAL FACILITIES FINANCED WITH PUBLIC AND PRIVATE FUNDS, BY TYPE OF PRODUCT AND SOURCE OF FUNDS, THROUGH MAY 31, 1941

Type of Product	Source of Funds ¹		
	Total	Public ²	Private ³
	(Thousands of Dollars)		
Total	\$3,061,087	\$2,290,851	\$770,236
Percentage	100.0	74.8	25.2
Chemicals	412,535	358,593	53,942
Products of Petroleum and Coal	25,131	13,396	11,735
Iron and steel products	284,264	135,060	148,604
Ammunition, shells & bombs	404,783	366,503	38,280
Guns	231,433	208,867	22,566
Aircraft	613,748	518,092	95,656
Ships and ship repair	486,816	476,003	10,813
Vehicles and tanks	43,340	23,720	19,620
Non-ferrous metals	229,744	83,730	146,014
Machinery (except electric)	153,454	49,621	103,833
Electrical equipment	34,666	18,414	16,252
Miscellaneous manufacturing	53,538	38,252	15,286
Non-manufacturing	87,635	..	87,635

¹ On May 15 there were pending applications for Certificates of Necessity totaling \$280,700,000, which have not been included in this compilation because an allocation to public or private source of funds was not possible in many cases.

² Includes facilities estimated to cost more than \$25,000 and financed through direct obligation (Government and E.P.F. contracts) of the War and Navy Departments, and Maritime Commission, and loans by Defense Plant Corporations and the Reconstruction Finance Corporation. Does not include Expansion financed by Great Britain.

³ As reflected by Certificates of Necessity approved.

1700 Defense Houses Completed Each Week

For the first three weeks of July the average in the Defense Housing program was 1700 completions a week. 1400 homes for defense workers were completed during the week ending July 5, 2000 in the week ending July 12, and 1700 in the week ending July 19. According to the latest available figures,

the Division of Defense Housing Coordination has allocated 107,643 homes in 170 localities. These dwellings are in forty-nine states or territories. Of this number, 74,617 have been placed under construction contract, and 22,617 have been completed. President Roosevelt recently approved twenty-one new localities in which homes may be financed under the National Housing Act.

Illinois Central's In-formation Folder

The Illinois Central has issued a folder which contains a great deal of information about this road and railroads in general. The Illinois Central is the thirteenth road in the country in mileage, the ninth in freight revenue, and the sixth in number of cars handled. Included is a large map showing the railroad's coverage, which extends from Sioux Falls, South Dakota, to the delta of the Mississippi River.

The Illinois Central, which was incorporated in 1851, has had an interesting history. Two well known figures who were with the road were Abraham Lincoln, in the capacity of attorney, and the legendary John Luther "Casey" Jones, of ballad fame.

One section of the folder is devoted to describing the resources of the territory served. These resources include the soft coal and iron ore of Kentucky and Alabama, the fluospar of Kentucky, the clay of Mississippi and Kentucky, the salt and sulphur of Louisiana, the oil of Kentucky, Mississippi and Louisiana, and the rock asphalt of Kentucky.

Ship Need Crisis Fosters Bethlehem Employee Training

(Continued from page 23)

However, it does recognize that with good instruction the fundamentals of craftsmanship can be instilled as a foundation for further development of either specialized skill or all-around craftsmanship.

Because of its nearness to the shipyard it was possible to draw on the Bethlehem Steel plant at Sparrows Point as a supply of skill, not only in assembling instructors but also in recruiting apprentices and learners for the training program. Classes in both types of schooling are carried on at the steel plant as well as at the shipyard.

Since steel making is a more continuous operation than shipbuilding, the steel plant, particularly in its maintenance work, affords a steadier opportunity for practice in skilled work common to both fields. When a ship is being built, the various craftsmen involved find work only as construction proceeds.

While the new instructors were getting their training, the supervisory force was called on to supply information upon which to found the training. Under the specialized training courses thus set up, each instructor is able, within a short time, to train as many as fifteen men to be single-purpose machine operators or limited-range craftsmen of the various trades.

The instructors, master craftsmen earnestly cooperating to supply technical knowledge and skill to the learners, are the backbone of the intensive program. They focus attention on essentials, shortening the training period.

(Continued on page 60)

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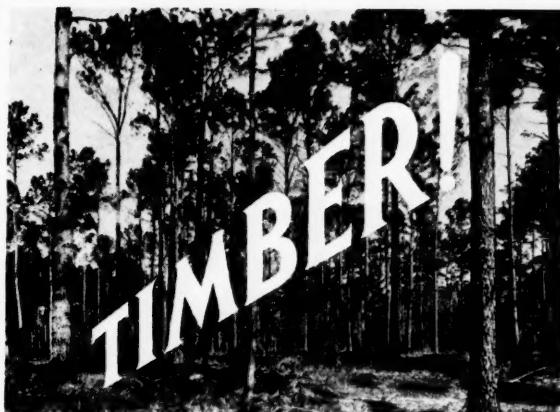
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ATLANTIC COAST LINE RAILROAD

PRIORITIES

(Continued from page 37)

ful negligence in their efforts to carry on business as usual. The problem of punitive action must, therefore, be considered in such cases.

Galvanizers Subject to Zinc Priority Order—Galvanizers who redistill zinc dross or skimmings are producers under the terms of the zinc priority order (M-11) and, as such, are subject to all the terms and requirements of that order, including the requirements for setting aside certain specified amounts of metal for emergency allocation by the Priorities Division.

Locomotive Builders Get A-3 Rating—To alleviate problems caused by a serious shortage of locomotives, the Priorities Division has issued two blanket preference rating orders which will facilitate both the construction of locomotives and their repair.

A preference rating of A-3 will be granted to an initial list of ten locomotive builders and also to about sixty repair plants.

Each producer or supplier granted the use of the new rating, may apply it to deliveries of material entering into construction or repairs by executing a copy of the appropriate order and serving it on his suppliers.

After the rating has been applied the first time, additional orders may be covered merely by citation of the rating granted originally.

A-10 Rating Granted for Certain Civil Airplanes—A preference rating of A-10 will be assigned to 27 producers of aircraft and aircraft items to facilitate the production of civil aircraft for Civilian Pilot Training Schools, for Home Guard units, for pipe-line patrol and for other specified purposes. The rating may be used to speed delivery of material going into repair parts and accessories of such planes as well as material going into new planes to be used for the purposes listed.

Only those producers who are specifically granted the use of the plan may use it, and then only for the production of planes or accessories to be used for the purposes listed in the order.

Priorities Training Courses to be Given—A series of training courses will be held by the Priorities Division during the next several months for business and industrial priorities specialists.

These meetings will be open to officials appointed by their companies or trade groups. A number of plants recently have appointed members of their staffs to specialize on priorities problems.

More than 100 priorities specialists from the steel industry attended the first training clinic on July 18, and took part in round table discussions on problems which have arisen in their field.

The next training course will be for trade association executives on August 1 in the New Social Security Building. Any association wishing to send a representative should communicate with Mason Mangum, Head of the Industrial Contact Unit, Compliance Section, Priorities Division.

Raw Silk Stocks Frozen—Acting to meet a threatened shortage caused by unsettled conditions in the Far East, the Director of Priorities has issued an order freezing all stocks of raw silk and limiting the processing of thrown silk to levels set during the week ending July 26.

Issued after conferences between representatives of OPM and OPACS, the order forbids either the delivery or the acceptance of raw silk except by authorization of the Director of Priorities. It applies equally to warehouses and to mills; it does not, however, prevent deliveries from ship to importers.

Mills are forbidden to knit, weave or otherwise process thrown silk in excess of the totals they processed during the week just ended.

To prevent possible dislocation of labor, provision was made that any processor unduly handicapped by the order could file an immediate appeal for relief, by telegraph.

As of July 1, stocks of raw silk in public warehouses were estimated at 53,000 bales with another 35,000 bales in hands of mills. Mills have recently been using about 5,000 bales per week.

Defense Project Contractors Given Blanket Preference Rating—Under a new plan of granting limited blanket preference ratings to important defense projects, a defense project selected for such treatment will receive a blanket preference rating order which can be used to expedite deliveries of materials going into the project, so long as those materials are on the Priorities Critical list.

The new blanket rating will be carefully restricted and may be used only on projects which, in the opinion of the Division of Priorities, are essential and must be completed promptly in the interests of the defense program.

The builder who gets the rating may apply it to his deliveries by executing a copy of the order and serving it on his suppliers. Additional orders flowing into the project may be given the rating by citation of the original order and the serial number assigned to the builder. Provisions are included so that the rating may also be extended by sub-suppliers. The form to be used in granting the new project ratings is P-19-a.

New Priorities Critical List Issued

A revised Priorities Critical List just issued contains over 300 items and classes of items on deliveries of which Army and Navy contracting officers may assign preference ratings.

Except for certain specified items which are subject to industry-wide control by the Priorities Division, most of the materials which appear on the list are subject to priority control only in the sense that Army and Navy orders for these items may automatically be assigned preference ratings. A copy of the new list, revised to July 7, is available on application to the Priorities Division.

Blanket Preference Rating for New Shipways—To speed production of merchant ships vitally needed for defense, the Priorities Division has issued blanket preference ratings to about twenty ship yards now engaged in building ship ways.

The preference ratings are to be used only for material going into the ship ways and for certain specified equipment to outfit the ways for production.

For ship ways which will produce completed ships this year, an A-1-a preference rating is being assigned. A rating of A-1-b will apply for ship ways which will produce completed ships in the years 1942 and 1943.

While the rating may be applied to material needed to outfit the ship ways for production, and may also be applied to deliveries of portable or stock tools, it cannot be used to obtain machine tools, which must be acquired in the usual manner through the use of individual preference rating certificates.

Priority Aid for Brazilian Steel Mill

Priority aid for the construction of a \$45,000,000 steel mill in Brazil has been assured by the Office of Production Management, acting on recommendations of the Department of State.

The decision to aid Brazil through priorities is in accordance with this Government's policy of assisting the other American republics to obtain essential materials in this country, in so far as this is compatible with our own defense requirements.

The National Steel Company of Brazil has already started ground breaking operations. The priority aid permitting the company to obtain steel, machinery, and many other kinds of equipment promptly, is designed to make possible the completion of this mill within two and one-half to three years.

Of the total cost of \$45,000,000, the sum of \$20,000,000 is being supplied through a loan from the Export-Import Bank. The rest is being supplied by the Brazilian Government and Brazilian financial institutions. The \$20,000,000 supplied by this country is to be spent in the United States, through contracts with from 250 to 300 different manufacturers and suppliers.

The contracts and orders involved will be given priority ratings sufficiently high to secure adequate deliveries, without delaying deliveries of our own defense contracts.

The output of the Brazilian steel mill will to that extent relieve the pressure on American industries in the prosecution of the Brazilian rearmament program.

War Department Buys Nearly \$3,000,000 Railway Equipment in Year

Purchases of railroad equipment for the War Department by The Quartermaster General during the fiscal year ended July 1 amounted to \$2,994,991.45—only a few dollars short of the 3-million dollar mark. This figure compares strikingly with purchases during the entire 10-year pre-emergency period from 1930 through 1939 of only \$179,988.

The 1940-41 report, itemizing rail equipment purchased during the year, shows a major expenditure of \$1,026,395 for 65 gasoline driven 20-ton locomotives. Other locomotives purchased were two 100-ton, three 60-ton, ten 45-ton, two 30-ton and two 20-ton units. In addition, the year's acquisitions include 260 tank cars, two railroad hospital unit cars and nineteen 25-ton locomotive cranes.

LANCASTER TANKS

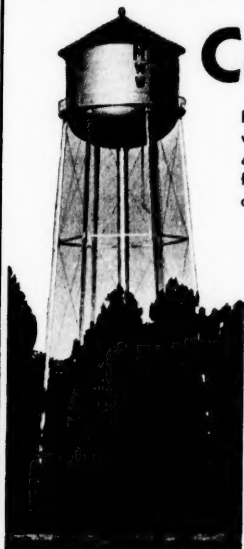
Elevated Tanks	Bins
Pressure Tanks	Extractors
Steel Storage Tanks	Barges
Process Tanks	Dredge Pipe and Accessories
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SOUTHERN Railway System Lines Blanket the Industrial South

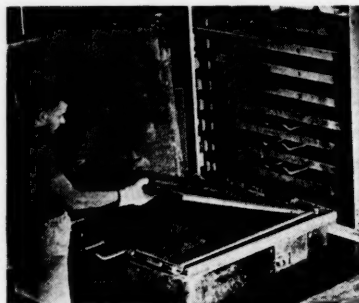
Communicate with RICHARD W. WIRT
Assistant Vice-President

In Charge of Industrial and Agricultural
Development. Washington, D. C.

New Methods and Equipment

High Insulation Value Claimed For New Type Of Light Rubber

Cellular rubber, a new material of high insulation value, is announced by the United States Rubber Company. This material, which is twice as light as cork, consists of a thin external dense layer enclosing microscopic cells of nitrogen gas in a matrix of rubber. The chief man-



Removing a 3 by 3 ft. cake of
baked cellular rubber.

ufacturing process, which is illustrated, consists of baking the rubber board, which is pliable when heated above 190 degrees. The weight of 4.5 pounds per cubic foot, as contrasted to the weight of water (62.5 pounds per cubic foot) makes this rubber valuable as flotation material. Its structure, in which each cell is separate and distinct, is resistant up to 22 pounds of pressure per square inch.

Instantaneous Fluorescent Power Unit

The National Transformer Corporation has developed a new fluorescent fixture which provides instantaneous light when switched on. This unit also eliminates the need for starters, starter switches, starter sockets, and compensator, thus removing the main source of trouble in fluorescent lighting. It operates on a self-polarized, double circuit principle, providing full brilliance and reducing cyclical flicker to a minimum. Further information may be obtained by writing the manufacturer at 224-232 Twenty-first Avenue, Paterson, N. J.

New Model Katolight A.C. Plant

Three new low-speed 1200 r.p.m. models have been added to the line of Katolight Plants manufactured by the Kato Engineering Co. The new sizes are 5000, 7500, and 10,000 watts. Generators are of the revolving armature type, with the generators being mounted directly to the engine bell housing. The complete engine and generator assembly is mounted on rubber, permitting installation of plant without bolting down on foundation.

56 Corporations Hold Three- Fourths of Army and Navy Contracts

Fifty-six corporations having defense supply contracts with the War and Navy Departments have contracted for almost three-fourths of the total dollar volume of such contracts, according to a compilation made by the Bureau of Research and Statistics, Office of Production Management. The balance of one-fourth of the total volume of defense supply contracts was divided among several thousand contractors.

Bethlehem Steel Corporation, at the end of May, held the largest volume of supply contracts—a total of \$927,000,000. The next largest volume of supply contracts was held by the New York Shipbuilding Corporation with \$507,000,000. General Motors Corporation ranked third with \$490,000,000 and Curtiss-Wright Corporation fourth with \$444,000,000. Fifth in order was Newport News Shipbuilding & Dry Dock Company with contracts totaling \$389,000,000, and sixth E. I. du Pont with \$318,000,000.

The combined defense supply orders of these six companies total \$3,075,000,000 or 31.3 per cent of \$9,839,000,000 representing the total volume of all defense supply contracts at the end of May. Tabulations of these are given in the following:

COMPANIES WITH SOUTHERN PLANTS HAVING SUPPLY CON- TRACTS TOTALING \$25,000,000 AND OVER

June 1940 through May 1941

	In Millions of Dollars
\$600,000,000 to \$1,000,000,000	
Bethlehem Steel Corporation	\$926.9
\$400,000,000 to \$500,000,000	
General Motors Corporation	489.9
Curtiss-Wright Corporation	443.9
\$300,000,000 to \$400,000,000	
Newport News Shipbuilding & Dry Dock Co.	389.2
E. I. duPont de Nemours & Company, Inc.	318.5
\$200,000,000 to \$300,000,000	
Glenn L. Martin Co.	249.1
Consolidated Aircraft Corpo- ration	226.4
United States Steel Corpo- ration	209.9
\$100,000,000 to \$200,000,000	
General Electric Company ..	152.5
Ford Motor Company	128.5
North American Aviation, Inc.	123.9
Cramp Shipbuilding Com- pany	114.8

Bendix Aviation Corporation	107.3
Western Cartridge Co.	102.9
\$70,000,000 to \$80,000,000	
American Woolen Co.	74.3
\$60,000,000 to \$70,000,000	
Tampa Shipbuilding Co., Inc.	62.1
\$50,000,000 to \$60,000,000	
Republic Aviation Co.	57.3
Ingalls Shipbuilding Com- pany	50.0
\$40,000,000 to \$50,000,000	
Vultee Aircraft Inc.	41.8
\$30,000,000 to \$40,000,000	
Gulf Shipbuilding Corpo- ration	39.7
Western Electric Co., Inc.	38.1
Atlas Powder Co.	36.0
\$25,000,000 to \$30,000,000	
Hercules Powder Company	29.9

DISTRIBUTION OF WAR AND NAVY SUPPLY CONTRACTS OF \$10,000 AND OVER BY VOLUME OF CONTRACTS HELD

June 1940 through May 1941

Dollar Vol- ume of Con- tracts Held by Com- pany in Mil- lions of Dol- lars	Number of Companies	Dollar Vol- ume of Con- tracts
600-1,000	1	\$927,000,000
500- 600	1	507,000,000
400- 500	2	934,000,000
300- 400	2	708,000,000
200- 300	5	1,131,000,000
100- 200	11	1,480,000,000
50- 100	12	832,000,000
25- 50	22	751,000,000
Up to 25*	n. a.	2,569,000,000
Total	n. a.	\$9,839,000,000

*From \$10,000 to \$25,000,000.
n. a.—not available.

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The whole title is "The March of Progress in the Upper Cumberland of Tennessee" and it is a beautiful book in magazine form that has reached our desk telling of progress in a favored region.

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Those responsible for the production of this work have done a service to their state and to the rest of us.

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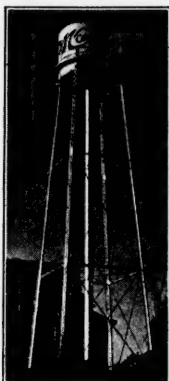
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Industrial News

Largest Dealer in Rebuilt Machinery Opens New York Office

The Equipment Corporation of America, this country's largest buyer, rebuilder, and seller of used construction equipment, has opened offices in the Hudson Terminal Building, New York City. Until 1928 this company manufactured concrete mixers in Chicago, but since that time they have dealt exclusively with used machinery. The large demand in the east created by defense projects is responsible for this latest expansion.

Oil Industry and Defense to be Theme of '42 Tulsa Oil Show

The methods and capabilities of the oil industry in servicing the defense program will be stressed at the 1942 International Petroleum Exposition, according to Wm. B. Way, general manager. A large list of exhibitors is anticipated, with a deadline of August 15 having been set for the taking up of options on space granted 1940 exhibitors. The 1942 exposition will take place at Tulsa, Okla., from the 16th to the 23rd of May.

Whitaker Advisory Chairman for Chemical Exposition

M. C. Whitaker, Vice President of the American Cyanamid Company, is again chairman of the Advisory Committee for the Eighteenth Exposition of Chemical Industries, according to a recent announcement. The exposition is to be held in the Grand Central Palace, New York, in the first week of December. Much attention will be paid to the role of chemical industries in defense production.

Watt Western Sales Manager for Carnegie-Illinois

The Carnegie-Illinois Steel Corporation recently announced the appointment of Herbert J. Watt as manager of sales for the western area. Mr. Watt, who will make his headquarters at the company offices in Chicago, will

coordinate the sales activities of the Chicago, Denver, Detroit, Indianapolis, Milwaukee, St. Louis, and St. Paul offices. His previous post was that of sales manager for the central area.

Tennes Enters Army Air Corps

M. J. Tennes, Jr., president of the Shafer Bearing Corporation, has entered active service as a Captain in the United States Army Air Corps, with permanent station at the Advanced Flying School, Phoenix, Arizona. During the absence of Captain Tennes, the management of the corporation will be under the direction of John F. Ditzell, Vice President and General Manager.

25,000th Norton Grinder

When the 25,000th Norton Grinder came off the assembly line recently, the Norton Company, of Worcester, Mass., issued an attractive booklet to commemorate the occasion. This booklet calls attention not only to the industrial record of the firm but to the consistently harmonious history of its employee relations. The company fosters a mutual benefit association, a credit union, and various athletic, social, and other avocational organizations. As proof of the fine plant spirit, Norton points with pride to the 513 medals which have been given out to men and women who have served the company for twenty-five years.

Norton Announces Retirement Program

The Norton Company, of Worcester, Mass., recently announced the adoption of a formal retirement income plan. In the past the company has paid many pensions to faithful employees who have retired, but with the company's expansion, it was deemed wise to adopt a formal plan, participation in which is voluntary. Not only will the company match employee contributions dollar for dollar, but Norton will also provide, entirely at its own expense, contributions for past service.

John W. Savage Dies

John W. Savage, assistant to the president of the General Electric Company, died recently following an illness of some months' duration. Mr. Savage had been connected with General Electric since 1921 and served the organization in accounting, sales, and production activities prior to his appointment as Mr. Charles Wilson's assistant in 1930. At the time Mr. Wilson, now president of the company, was manager of the merchandise department.

Erlacher's Territory Expanded

The J. G. Brill Company and The a. c. f. Motors Company have extended the transit coach sales territory of A. J. Erlacher, District Sales Manager, to include the Carolinas, Georgia, and Florida in addition to Pennsylvania, Western Maryland and Southern New Jersey.

Ewing Joins Foxboro Staff at Houston

Mr. George B. Ewing, Jr., has joined the staff of sales engineers attached to the Houston office of The Foxboro Company, manufacturers of instruments for process measurement and control. Mr. Ewing's industrial experience, has been in machine and tool-making and in petroleum refining operations. He is a graduate of the University of Arkansas and the engineering course at the University of Alabama.

McCulloch Appointed Works Mgr., Nashville Division of Vultee

Completing the executive staff of the Nashville Division of Vultee Aircraft, Inc., Robert McCulloch has been appointed works manager by Harvey C. Tafe, general manager of the company's Tennessee operations. Mr. McCulloch will be in charge of all production, methods and control and inspection departments in the plant. The new appointee has had eighteen years of aircraft experience, his most recent post having been the factory managership of North American Aviation.

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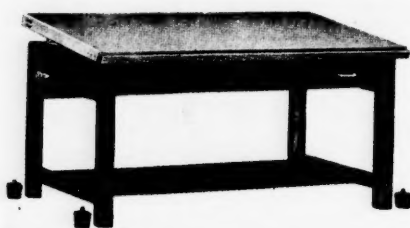
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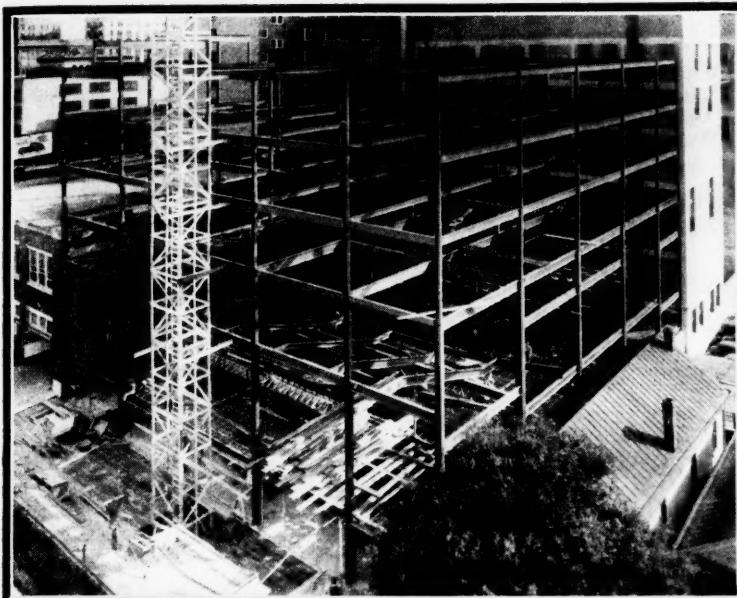
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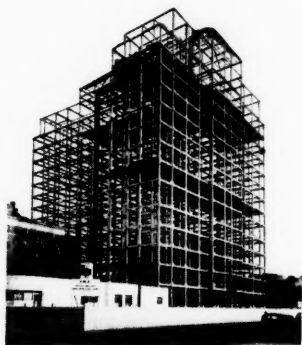
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Trade Literature

HYDRAULIC BRAKES—

Bulletin IU-20—describing and illustrating hydraulic brakes for industrial applications. Information is given concerning two types of hydraulic bridge brakes, the straight brake and the brake with a magnetic release attachment. Safety and economy of operation are stressed.
Wagner Electric Corp., St. Louis, Mo.

EVAPORATORS—

Bulletin E-100—describing Swenson Long-Tube vertical evaporators. Emphasis is placed on the principle of operation. Such liquids as gelatin, glue, salt brine, coffee extract, and tomato juice may be condensed.
Swenson Evaporator Co., Div. of Whiting Corp., Harvey, Ill.

ROTARY SHEARS—

Bulletin QW-100—describing and illustrating

ing "Quickwork" rotary shears for heavy, medium, light, and sheet metal work. Special attention is paid to the new cutter design, which improves speed and accuracy. Copies are available at the Quickwork Whiting Division of the
Whiting Corp., Harvey, Ill.

WATERPROOF CLOTHING—

Catalogue No. 203—describing 150 styles of boots, service coats, work suits, aprons, hats, rubber blankets, and gloves. More than one-third of these are illustrated. A copy may be obtained by writing Department V of the
Goodall Rubber Co., Inc., Philadelphia, Pa.

MILLED SPONGE RUBBER—

Catalogue section—listing and illustrating standard grades and shapes and stock size and special size slabs of milled sponge rubber. A cellular structure is imparted to

the rubber by mixing sodium bicarbonate which is turned into gas by vulcanization heat. Requests should be addressed to the
B. F. Goodrich Co., Akron, Ohio

OIL-SOLUBLE EMULSIFIER—

Booklet—giving information regarding the methods for cleaning road building and construction machinery with Oakite Composition No. 9, an oil-soluble emulsifier. This booklet may be obtained from
Oakite Products, Inc., 57 Thames St., New York City

CHAINS—

Bulletins—bound in catalogue form, describing and illustrating sling and crane chains, BBB coil chain, high carbon electric weld loading chain, and several other types. Of special interest is the section dealing with safe loads and "proof tests." A copy of this catalogue may be obtained from
S. G. Taylor Chain Co., Hammond, Indiana

POROUS BEARINGS—

Catalogue—revised to include the latest additions to the "Selflube" line. The properties and uses of these self-lubricating bearings are described, and complete installation details are given. Many items are illustrated, and there are graphs showing the allowance for press fit into housing and for running fit after installation.
Keystone Carbon Co., St. Marys, Pa.

LATHES—

Catalogue No. 50-B—describing South Bend precision lathes, with illustrations of all attachments, tools, and accessories. Information is given which aids in the selection of the best machine for any particular job. Copies are available from the
South Bend Lathe Works, 398 E. Madison St., South Bend, Indiana

METALLIZING—

Book—The History, Purpose, and Practice of Metallizing (metal spraying) outlining the material indicated in the title in language understandable to the layman. This book not only shows the various methods and equipment used in spraying metal, but also the metals which are best adapted to different needs. Numerous illustrations accompany the text. Published by
The Metallizing Co. of America, Inc., Chicago, Ill.

TEXTILES—

Directory—Davison's Textile Directory for Salesmen gives the location, by state, county, and city, for every textile plant in the country. Arranged alphabetically by city and state, this directory also gives the chief manufactures of each mill, the executive head of each plant, the amount of capitalization, the rail service available, the amount and type of equipment, and the type of power used. This book, which is pocket-size, is available for \$4 from the
Davison Publishing Co., Ridgewood, N. J.

STEEL FLOOR GRATINGS—

Handbook—"New Ideas in Functional Floor Design" describing and illustrating many uses of open steel floor grating. Included in the contents are a table of safe loads (based on Government specifications), a typical floor layout, and detailed clipping or fastening diagrams. A free copy may be obtained from
The Open Steel Flooring Institute—American Bank Bldg., Pittsburgh, Pa.

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Trade Literature

SAFETY SHOES—

Catalogue—1942 edition, of Lehigh Safety Shoes, with special sole construction for every industry. The shoes illustrated are available for 48-hour delivery from stock. The catalogue includes a safety shoe buyers guide, with information as to what to specify in ordering safety shoes. Copies obtainable from
Lehigh Safety Shoe Co., Allentown, Pa.

TRANSFORMERS—

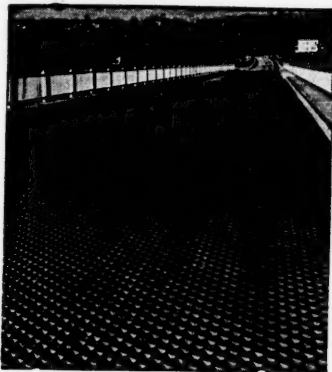
Bulletin No. TU-34—describing and illustrating a new type of transformer which has integral protection against both surges and overloads. Copies may be obtained from
The Wagner Electric Corp., 6400 Plymouth Ave., St. Louis, Mo.

The Marketing of Used Automobiles, by Theodore H. Smith, represents extensive research into a field which has had comparatively little attention paid it except by used-car dealers themselves. This book, published by the Bureau of Business Research of the Ohio State University, is a treatise written from the point of view of the dealer and manufacturer.

The author uses Cleveland, Ohio, as his center of research, and it may be reasonably assumed that his findings there are typical. Beginning with a short history of the used car problem, the book includes material on the supply and demand of used automobiles, used-car prices, the buying of used cars by automobile dealers, sales promotion, automobile sales financing, and suggestions for improvements in used-car marketing.

Dr. Smith feels that most of the ills in the used-car market today may easily be cured by the manufacturers. He finds that most of the malpractices on the part of dealers would be unnecessary were it not for the coercive attitude of many manufacturers with regard to new cars and parts. Thanks to the trade-in practice, the used automobile has become a vital part of every automobile dealer's business, yet for the most part the manufacturers regard it as an unwanted step-child. Cooperation between dealer and maker in handling the used-car problem would do a great deal to eliminate it and to build up consumer good will which is now sadly lacking.

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Cairo Approach N. Y. State Hy. Dept.
Catskill, N. Y. Engineers

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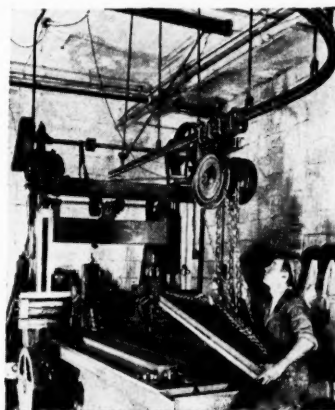


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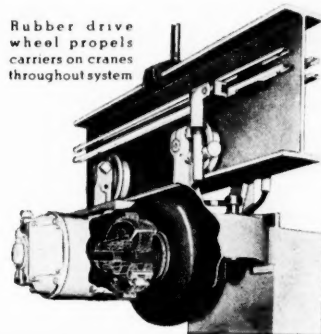
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CLEVELAND, OHIO



Easy placing of heavy die blocks in planer with no damage to dies or machinery.



Rubber drive wheel propels carriers on cranes throughout system

National Defense Program Awards in the South

(Continued from page 39)

Reconstruction Finance Corporation
(F. L. A.) 1,025,350

CONTRACTS AWARDED JUNE 16 TO JULY 15

Quartermaster Corps (Army)
Cambridge Shipbuilders, Inc., Cambridge, boats, \$530,640.
Maryland Workshop for the Blind, Baltimore, 112,000 cotton pillowcases, \$26,040.
Victor Hosiery Corp., Hagerstown, 200,000 prs. tan cotton socks, \$27,324.
Columbia Steamship Line, Inc., Baltimore, steamer "SOUTHPORT", \$23,951.
Mt. Vernon Woodberry Mills, Inc., Baltimore, 287,000 yds. cotton duck, \$81,365.
Blumenthal & Kahn, Baltimore, electrical work for light and power and installation of substation at Edgewood Arsenal, \$58,878.

Air Corps (Army)
Glenn L. Martin Company, Baltimore, airplanes, engines and spare parts, \$154,841,372.
Weems System of Navigation, Annapolis, aircraft plotters, \$75,600.
Fairchild Aircraft Div., Fairchild Engine & Airplane Corp., Hagerstown, airplanes, engines and spare parts, \$1,037,543.

Medical Corps (Army)
The Waxaid Co., Baltimore, floor polish and wax, \$41,883.
S. Rosenbloom, Inc., Baltimore, corduroy bath robes, \$348,750.

Chemical Warfare Service (Army)
Federal Tin Co., Inc., Baltimore, tinplate, \$3,116.
O'Sullivan Rubber Co., Inc., Hagerstown, out-let valves, \$23,520.

Ordnance (Army)
Commercial Bag Mfg. Co., Baltimore, jute bur-lap, \$5,000.
Triumph Explosives, Inc., Elkton, photo-flash bombs, \$1,375,810.

Signal Corps (Army)
Julian P. Frieze & Sons, Baltimore, meteorolog-ical equipment, \$22,333.
Graybar Electric Co., Point Breeze, cable and reels, \$87,268.
Bendix Radio Corp., Baltimore, radio compass units, \$2,706.
Western Electric Co., Point Breeze, wire with reels, \$515,540.
Bendix Radio Corp., Towson, crystals and coils, \$3,346.

MISSISSIPPI

Value of Total Awards July 1, 1940
to July 15, 1941

Army Contracts	\$17,545,925
Navy Contracts	54,013,696
W. P. A. Defense Projects (F. W. A.)	2,652,343
Public Buildings Admin., Def. Hous-ing (F. W. A.)	148,500
Office of Education Defense Train-ing (F. W. A.)	930,497
National Youth Administration (F. S. A.) (Defense Training Funds for 1941)	1,054,810
Reconstruction Finance Corporation (F. L. A.)	150,000

CONTRACTS AWARDED JUNE 16 TO JULY 15

Ordnance (Army)
Anderson-Tully Co., Vicksburg, white ash, \$1,320.
FWA (Federal Works Agency)
Green Lumber Co., Laurel, defense housing (475 prefabricated units) for defense industrial workers at Ship Yard, Wilmington, North Carolina, \$1,350,900.

Quartermaster Corps (Army)
Reliance Mfg. Co., Hattiesburg, 75,000 herring-bone twill suits, \$83,895.
Seminole Mfg. Co., Columbus, 275,000 woolen serge trousers, \$211,538.

MISSOURI

Value of Total Awards July 1, 1940
to July 15, 1941

Army Contracts	\$444,130,000
Navy Contracts	22,759,777
W. P. A. Defense Projects (F. W. A.)	900,762
Public Buildings Administration (F. W. A.)	3,096,290
Office of Education Defense Train-ing (F. S. A.)	985,724
National Youth Administration (F. S. A.) (Defense Training Funds for 1941)	1,511,297
Defense Plant Corporation (F. L. A.)	16,259,044
Reconstruction Finance Corporation (F. L. A.)	216,055

CONTRACTS AWARDED JUNE 16 TO JULY 15

Quartermaster Corps (Army)
Mount City Cap Mfg. Co., Inc., St. Louis, 200,-

000 twill caps, \$27,366.
Union Cap Co., St. Louis, 150,000 twill caps, \$20,625.
Correct Cap Co., St. Louis, 100,000 twill caps, \$13,432.
Baker-Lockwood Mfg. Co., Kansas City, 15 sur-gical tents, \$10,832.
Industrial Aid for the Blind, St. Louis, 1,400 cotton pillowcases, \$3,255.
Oberman & Co., Jefferson City, 200,000 khaki cotton trousers, \$135,320.
Empire Mattress Co., Kansas City, 20,000 cotton mattresses, \$94,240.
International Shoe Co., St. Louis, 8,083 prs. leather waterproof boots, \$56,419.
J. A. Lamy Mfg. Co., Sedalia, 60,000 khaki cot-ton trousers, \$40,780.
Western Last Co., St. Louis, 5,000 prs. Munson Hinge Lasts, \$7,750.
Society Brand Hat Co., St. Louis, 45,000 ser-vice caps, \$131,493.
Baker-Lockwood Mfg. Co., Kansas City, 250 tent flies, \$6,970.
The Alligator Co., St. Louis, 37,500 protective suits, \$298,576.
Brown Shoe Co., Inc., St. Louis, 50,000 prs. ser-vice shoes (composition soles), \$165,500.
Burlington Mfg. Co., Kansas City, 50,000 her-ringbone twill suits, \$57,500.
Oberman & Co., Springfield, 180,000 woolen serge trousers, \$130,743.
Tulsa Rig & Reel Mfg. Co., Tulsa, Okla., con-struction of 12 regimental chapel buildings at Fort Leonard Wood, \$227,900.
Kansas City Cap Mfg. Co., Kansas City, 150,-000 herringbone twill hats, \$81,000.
Lerner Bros. Cap Co., Kansas City, 100,000 herringbone twill hats, \$51,989.
Shapely Cap Co., St. Louis, 90,000 herringbone twill hats, \$57,600.
Morose Cap Co., St. Louis, 90,000 herringbone twill hats, \$57,330.
Continental Hat & Cap Co., Kansas City, 300,-000 herringbone twill hats, \$176,500.

Air Corps (Army)
Transcontinental & Western Air, Inc., Kansas City, gasoline and oil, \$23,540.
Unicom Company, Kansas City, transportable base photographic laboratories, \$139,675.
The Kock Butcher's Supply Co., North Kansas City, electric refrigerators, \$73,958.
S. G. Adams Company, St. Louis, photographic dark room equipment, \$77,393.
Baker-Lockwood Mfg. Co., Inc., Kansas City, target assemblies, \$80,575.

Medical Corps (Army)
Buck X-Ograph Co., St. Louis, x-ray field units, \$38,500.

Coast Artillery Corps (Army)
Witte Engine Works, Kansas City, generating sets, \$7,444.

Corps of Engineers (Army)
Harnischfeger Corp., Milwaukee, Wisc., trench machine, Jefferson Barracks, \$2,500.
Independent Concrete Pipe Corp., Inc., St. Louis, pipe and fittings, Jefferson Barracks, \$7,027.

Rearwin Aircraft & Engines, Inc., Fairfax Air-port, Kansas City, Kan., compression rivet-ers, Aircraft Assembly Plant, Kansas City, \$8,535.
Gross & Janes Co., St. Louis, cross ties, \$160,-650.

Ordnance (Army)
Turner Uni-Drive Co., Kansas City, gear box drives, \$3,321.
Crawford Mfg. Co., Kansas City, machine gun covers, \$2,975.
General Cable Corp., St. Louis, cable and reels, \$6,183.
Lincoln Engineering Co., St. Louis, shells, \$386,100.
International Shoe Co., St. Louis, 150,000 prs. service shoes (leather soles), \$516,000.

Chemical Warfare Service (Army)
Monsanto Chemical Co., St. Louis, chemicals, \$150,000.

NORTH CAROLINA

Value of Total Awards July 1, 1940
to July 15, 1941

Army Contracts	\$58,899,807
Navy Contracts	14,763,644
U. S. Maritime Commission Emer-gency Ship Program	64,549,375
Farm Security Admin. (Agr.) (De-fense Housing)	70,000
W. P. A. Defense Projects (F. W. A.)	2,549,321
Defense Housing (F. W. A.)	1,350,900
U. S. H. A. Defense Housing Pro-jects (F. W. A.)	1,955,075
Public Buildings Admin., Def. Hous-ing (F. W. A.)	1,543,000
Office of Education Defense Train-ing (F. S. A.)	1,018,976
National Youth Administration (F. S. A.) (Defense Training Funds for 1941)	1,559,984
Reconstruction Finance Corporation (F. L. A.)	5,164

CONTRACTS AWARDED JUNE 16 TO JULY 15

Quartermaster Corps (Army)
Prudential Textile Corp., Concord, 168,000 cot-ton drill, \$38,587.

Amos Hosiery Mills, High Point, 250,000 prs. tan cotton socks, \$33,725.
Elliott Knitting Mills, Inc., Hickory, 300,000 prs. tan cotton socks, \$40,500.
Crown Hosiery Mills, Inc., High Point, 200,000 prs. tan cotton socks, \$27,000.
Harris & Covington Hosiery Mills, Inc., High Point, 200,000 prs. tan cotton socks, \$38,052.
Standard Hosiery Mills, Inc., Alamance, 200,000 prs. tan cotton socks, \$26,500.
Ragan Knitting Company, Thomasville, 1,000,-000 prs. tan cotton socks, \$130,928.
Chester H. Roth Company, Hickory, 200,000 prs. tan cotton socks, \$26,940.
Guilford Hosiery Mills, Inc., High Point, 450,-000 prs. tan cotton socks, \$60,480.
Tip Top Hosiery Mills, Asheboro, 200,000 prs. tan cotton socks, \$25,987.
Maurice Mills Co., Thomasville, 900,000 prs. tan cotton socks, \$118,800.
Waldensian Hosiery Mills, Valdese, 600,000 prs. tan cotton socks, \$78,820.
Triangle Hosiery Co., High Point, 200,000 prs. tan cotton socks, \$26,480.
Thomas Mills, Inc., High Point, 1,080,000 prs. tan cotton socks, \$144,444.
O. E. Kearns & Sons, Inc., High Point, 340,000 prs. tan cotton socks, \$45,696.
Marshall Field & Co., Spray, 10,285 wool blankets, \$65,925.
Leaksville Woolen Mills, Charlotte, 741 wool blankets, \$3,904.
Chatham Mfg. Co., Elkin, 33,000 wool blankets, \$213,900.

Cone Export & Commission Co., Greensboro, 1,750,000 yds. cotton cloth, \$541,450.
Batavia Mills, Inc., Concord, 226,000 bath towels, \$99,792.
R. W. Eldridge Co., Inc., Charlotte, 1,200,000 handkerchiefs, \$56,520.
Batavia Mills, Inc., Concord, 500,000 hand towels, \$76,424.
Pee Dee Mfg. Co., New York, N. Y. (Mill at Rockingham), 2,000,000 drill cotton, \$355,000.

Air Corps (Army)
Municipal Airport Commission, Charlotte, gaso-line and oil, \$25,500.

Serv-Air, Inc., Raleigh, gasoline and oil, \$3,240.

Corps of Engineers (Army)
Raney Chevrolet Co., Wilmington, trucks, \$1,-375.

Aqua Systems, Inc., New York, N. Y., con-struction of gasoline dispensing system, Air Base, Charlotte, \$64,137.

Ordnance (Army)
Sayles Biltmore Bleacheries, Inc., Biltmore, cotton cloth, \$38,575.

H. W. Porter & Co., Inc., Pomona, sectional tile conduit, \$3,180.

Public Works Administration (Federal Works Agency)
Green Lumber Co., Laurel, Miss., defense hous-ing (475 prefabricated units) for Defense In-dustrial Workers at Ship Yard, Wilmington, \$1,350,900.

OKLAHOMA

Value of Total Awards July 1, 1940
to July 15, 1941

Army Contracts	\$186,125,991
Navy Contracts	1,879,219
Civil Aeronautics Admin. (Com-merce) (Airport Expansion Pro-gram)	549,000
W. P. A. Defense Projects (F. W. A.)	3,024,696
Public Buildings Admin., Def. Hous-ing (F. W. A.)	465,500
Office of Education Defense Train-ing (F. S. A.)	708,156
National Youth Administration (F. S. A.) (Defense Training Funds for 1941)	1,211,845
Reconstruction Finance Corpora-tion (F. L. A.)	165,000

CONTRACTS AWARDED JUNE 16 TO JULY 15

Air Corps (Army)
Oklahoma City Air Terminal, Oklahoma City, gasoline, \$88,000.

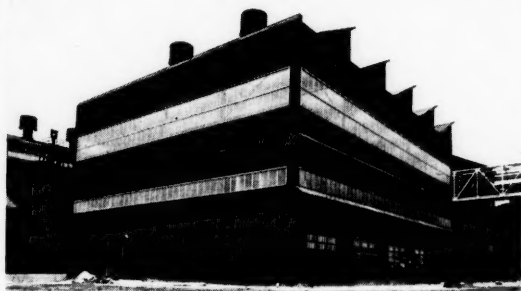
SOUTH CAROLINA

Value of Total Awards July 1, 1940
to July 15, 1941

Army Contracts	\$27,085,031
Navy Contracts	123,744,663
W. P. A. Defense Projects (F. W. A.)	2,820,511
U. S. H. A. Defense Housing Pro-jects (F. W. A.)	3,301,238
Public Buildings Admin., Def. Hous-ing (F. W. A.)	1,059,000
Office of Education Defense Train-ing (F. S. A.)	764,058
National Youth Administration (F. S. A.) (Defense Training Funds for 1941)	870,078
Reconstruction Finance Corporation (F. L. A.)	230,164

CONTRACTS AWARDED JUNE 16 TO JULY 15

Quartermaster Corps (Army)
Yarn & Grey Goods Mill: Equinox Mill, Ander-(Continued on page 54)



Aluminum Ore Co., Mobile, Ala.
13,000 square feet White Corrugated Wire Glass, side-wall construction.

SPECIFY ORIGINAL SOLID CORRUGATED WIRE GLASS

For side-wall construction with non-corrosive accessories of Aluminum or Copper. We can furnish fixed panels, center or top pivoted vents three lights wide or continuous top hung ventilating units.

Also used with excellent results for skylights, marquees, canopies or wherever daylight is needed.

Our Engineering Service Department will be glad to aid you on your daylighting problems. Write or wire.

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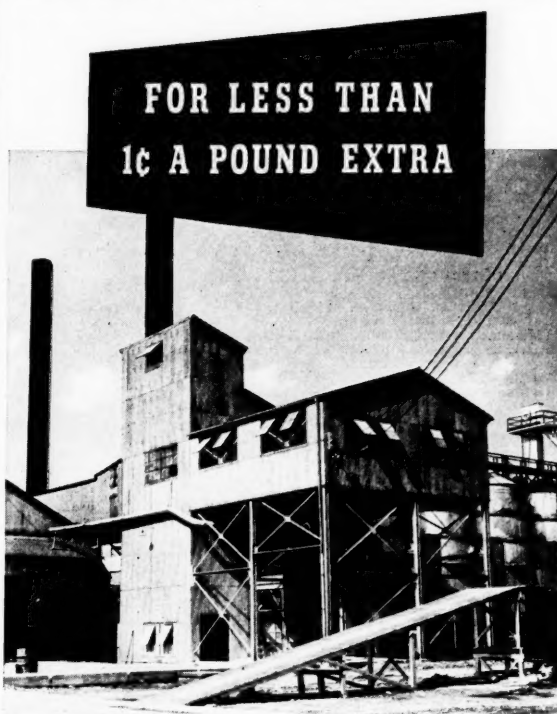
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Defense materials are produced in these galvanized ARMCO Ingot Iron buildings. The metal is constantly subjected to a highly corrosive industrial atmosphere.

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That's why galvanized ARMCO Ingot Iron is being used to cover so many new structures needed by defense plants. This durable metal has the longest service record of any low-cost iron or steel sheets. Installations dating back as far as 1909 are in good condition today. Yet galvanized ARMCO Ingot Iron with all its extra durability costs less than a cent a pound more than ordinary galvanized steel.

Even so, durability is not the only advantage of galvanized ARMCO Ingot Iron. The corrugated metal assures fast, easy erection. It protects against fire and lightning, saves costly repairs and has a high salvage value.

Use extra-durable galvanized ARMCO Ingot Iron* on your new factory buildings and warehouses for long life and low maintenance costs. The American Rolling Mill Company, 2361 Curtis Street, Middletown, Ohio.



**ARMCO
INGOT IRON**

*For immediate painting and long paint life specify galvanized ARMCO Ingot Iron PAINTGRIP sheets.

National Defense Program Awards in the South

(Continued from page 52)

son, 455,000 yds. cotton tent duck, \$125,443.
Grey Goods Mill: Equinox Mill, Anderson, 380,000 yds. cotton tent duck, \$104,766.
Hawthorne Flying Service, Charleston, gasoline and oil, \$12,320.
Pacific Mills, Lyman, 150,000 twill cotton cloth, \$44,940.
Graniteville Co., Graniteville, 760,000 twill cotton cloth, \$240,692.
Nantex Mfg. Co., Greenwood, 50,000 mosquito bars, \$30,623.

Corps of Engineers (Army)

Graniteville Co., Graniteville, 330,000 yds. cotton cloth, \$104,511.
Gossett Mills, New York, N. Y. (Mills in South Carolina), 150,000 yds. cotton overcoat lining cloth, \$56,250.

Bureau of Ships (Navy)

Mt. Vernon-Woodberry Mills, Inc., Columbia (Manufacturers: Columbia Mills & Tallassee, Ala.), canvas, cotton, \$258,388.

Federal Loan Agency

Hawthorne School of Aeronautics, Orangeburg (a new corporation), for the construction and equipment of an aeronautical school to train pilots for the army, at Orangeburg, (a participation loan), \$142,500.

TENNESSEE

Value of Total Awards July 1, 1940
to July 15, 1941

Army Contracts	\$77,683,672
Navy Contracts	1,629,346
Farm Security Admin. (Agr.) (Defense Housing)	114,750
W. P. A. Defense Projects (F. W. A.)	433,530
Defense Housing (F. W. A.)	786,625
U. S. H. A. Defense Housing Projects (F. W. A.)	774,800
Office of Education Defense Training (F. S. A.)	1,093,569
National Youth Administration (F. S. A.) (Defense Training Funds for 1941)	1,301,416
Defense Plant Corporation (F. L. A.)	32,223,829
Reconstruction Finance Corporation (F. L. A.)	15,086

CONTRACTS AWARDED JUNE 16 TO JULY 15

Quartermaster Corps (Army)

Yarn & Grey Goods Mills: Brookside Mills, Knoxville, 1,022,000 yds. cotton tent duck, \$350,035.
Slumber Products Corp., Memphis, 12,500 cotton mattresses, \$53,125.
O'Bryan Bros., Inc., Nashville, 100,000 khaki cotton trousers, \$68,000.
General Shoe Corp., Nashville, 64,984 service shoes, \$231,889.
Springfield Woolen Mills, Springfield, 2,000 wool blankets, \$10,164.
Gray & Dudley Co., Nashville, 13,500 camp kettles, \$26,460.

Ordnance (Army)

Dempster Bros., Inc., Knoxville, hoisting units with detachable buckets, \$4,709.
Fulton Syphon Co., Knoxville, ordnance supplies, \$682,484.

Corps of Engineers (Army)

Pittman Auto Co., Brownsville, hydraulic dump trucks, \$3,984.

TEXAS

Value of Total Awards July 1, 1940
to July 15, 1941

Army Contracts	\$343,112,904
Navy Contracts	130,757,608
U. S. Maritime Commission Emergency Ship Program	66,198,750
Farm Security Admin. (Agr.) (Defense Housing)	108,693
Civil Aeronautics Admin. (Commerce) (Airport Expansion Program)	346,187
W. P. A. Defense Projects (F. W. A.)	14,043,346
Defense Housing (F. W. A.)	1,543,500
U. S. H. A. Defense Housing Projects (F. W. A.)	2,791,829
Public Buildings Admin., Def. Housing (F. W. A.)	3,011,500
Office of Education Defense Training (F. S. A.)	2,540,085
National Youth Administration (F. S. A.) (Defense Training Funds for 1941)	2,958,074
Defense Plant Corporation (F. L. A.)	22,932,408
Reconstruction Finance Corporation (F. L. A.)	12,697,500

CONTRACTS AWARDED JUNE 16 TO JULY 15

Quartermaster Corps (Army)

Dallas Association for the Blind, Dallas, 61,000 cotton pillowcases, \$14,183.
Ft. Worth (Tarrant Co.) Association for the

Blind, Ft. Worth, 15,000 cotton pillowcases, \$3,487.

Harris County Association for the Blind, Houston, 18,000 cotton pillowcases, \$4,185.

San Antonio Association for the Blind, San Antonio, 44,000 cotton pillowcases, \$10,230.

Taylor Bedding Mfg. Co., Taylor, 147,500 cotton mattresses, \$643,789.

Denison Mattress Factory, Denison, 15,000 cotton mattresses, \$75,000.

A. Grana Mattress Co., San Antonio, 5,000 cotton mattresses, \$24,701.

Conro Mfg. Co. of Texas, Dallas, 325,000 khaki cotton trousers, \$217,750.

Haggar Co., Dallas, 150,000 khaki cotton trousers, \$97,013.

Williamson-Dickie Mfg. Co., Ft. Worth, 125,000 khaki cotton trousers, \$84,787.

J. M. Wood Mfg. Co., Waco, 100,000 khaki cotton trousers, \$65,000.

Waco Garment Mfg. Co., Waco, 25,000 khaki cotton trousers, \$16,750.

Sunshine Clothing Mfg. Co., San Antonio, 90,000 khaki cotton trousers, \$56,416.

Crawford-Austin Mfg. Company, Waco, 200,000 cotton mattresses, \$858,848.

Crawford-Austin Mfg. Co., Waco, 25,000 cotton filled comforters, \$67,581.

Douglas Co., Waco, 25,000 cotton filled comforters, \$68,165.

Douglas Co., Waco, 110,000 cotton mattresses, \$498,001.

Crawford-Austin Mfg. Co., Waco, 15,000 tents, \$119,100.

National Pants Corp., Dallas, 125,000 woolen serge trousers, \$92,659.

Lion Brand Mfg. Co., Dallas, 100,000 woolen serge trousers, \$74,314.

Supplies & Accounts (Navy)

Humble Oil Refining Co., Houston, gasoline, \$90,000.

Marine Corps (Navy)

Taylor Bedding Mfg. Co., Taylor, mattresses, cotton, \$79,097.

Air Corps (Army)

Pan American Airways, Brownville, gasoline and oil, \$33,285.

Humble Oil & Refining Co., Houston, gasoline and oil, \$55,466.

The City of Abilene, Abilene, gasoline and oil, \$23,100.

English Field, Amarillo, gasoline, \$31,250.

North American Aviation, Inc., Dallas, airplanes and spare parts, \$57,725,573.

VIRGINIA

Value of Total Awards July 15, 1940
to July 1, 1941

Army Contracts	\$120,467,349
Navy Contracts	746,100,691
Farm Security Admin. (Agr.) (Defense Housing)	931,303
W. P. A. Defense Projects (F. W. A.)	3,744,431
W. P. A. Defense Housing Projects (F. W. A.)	6,009,168
Public Buildings Admin., Def. Housing (F. W. A.)	3,634,000
Office of Education Defense Training (F. S. A.)	1,183,876
National Youth Administration (F. S. A.) (Defense Training Funds for 1941)	1,142,620
Reconstruction Finance Corporation (F. L. A.)	6,480

CONTRACTS AWARDED JUNE 16 TO JULY 15

Quartermaster Corps (Army)

Blue Ridge Overall Co., Christiansburg, 100,000 twill jackets, \$75,000.

American Hardware Co., Inc., Petersburg, 100,000 trunk lockers, \$438,000.

Chicago Bridge & Iron Co., Chicago, Ill., construction steel water tank, Ft. Monroe, \$39,850.

Noland Company, Inc., Rosslyn, 5,000 batteries, \$1,200.

Craddock-Terry Shoe Corp., Lynchburg, 36,000 prs. service shoes (leather soles), \$125,640.

Crawford Mfg. Co., Inc., Richmond, 75,000 field bags, \$147,000.

Corps of Engineers (Army)

E. C. Rice & Sons, Reedville, Rafts, \$4,200.

Newport News Shipbuilding & Dry Dock Co., Newport News, repairing dredge "CHINOOK," \$21,441.

New England Bolt Co., Inc., Everett, Massachusetts, bolts, anchor and pipe sleeves, Fort Story, \$3,276.

Ordnance (Army)

The Tredegar Co., Richmond, projectiles, \$159,932.

Miller Mfg. Co., Inc., Richmond, boxes, \$356,000.

Aeronautics

Reynolds Metals Co., Richmond, aluminum sheet, rod and tube, \$180,000.

Supplies & Accounts (Navy)

Southern Materials Corp., Norfolk, concrete, ready mixed, \$51,024.

WEST VIRGINIA

Value of Total Awards July 15, 1940
to July 1, 1941

Army Contracts	\$47,763,640
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Navy Contracts	52,232,393
W. P. A. Defense Projects (F. W. A.)	285,082
Office of Education Defense Training (F. S. A.)	1,217,500
National Youth Administration (F. S. A.) (Defense Training Funds for 1941)	815,998
Reconstruction Finance Corporation (F. L. A.)	44,890

CONTRACTS AWARDED JUNE 16 TO JULY 15

Quartermaster Corps (Army)

Blue Jay Mfg. Co., Huntington, 200,000 twill trousers, \$130,000.

J. L. Stifel & Sons, Inc., Wheeling, 5,500,000 yds. cotton cloth, \$1,670,350.

The Washington Mfg. Co., Huntington, 100,000 woolen serge trousers, \$75,000.

J. L. Stifel & Sons, Inc., Wheeling, 400,000 heringbone cotton twill cloth, \$132,680.

Signal Corps (Army)

The American Fork & Hoe Co., Charleston, axes, \$4,380.

New Plants in the South

(Continued from page 41)

operated in conjunction with Chemical Warfare Service Arsenal; approximate amount authorized \$6,000,000 to be used for construction of buildings and for purchase of machinery and equipment.

MOBILE—shipbuilding—Alabama Dry Dock & Shipbuilding Corp., has allotment of \$5,010,000 for expansion.

MONTGOMERY—pipe terminal—Standard Oil Co., has site of 20 acres, about 4 miles from town, along Hunter Loop Rd. for gasoline storage depot to be served by a branch of the pipe line to be built connecting Louisiana and Texas oil fields with the Atlantic Seaboard; will serve Montgomery and adjacent territory; pipe line will be the operating facility of Plantation Pipe Line Co., a subsidiary of Standard Oil Co.

ARKANSAS

Aluminum Plant—Bohn Aluminum & Brass Corp., 1400 LaFayette Bldg., Detroit, Mich., reported, will operate aluminum plant to be located in Arkansas; Government owned.

CLARENDON—generating plant—Arkansas Power & Light Co., Pine Bluff, plans rebuilding old electric power generating plant.

JACKSONVILLE—fuse plant—Ford, Bacon & Davis, 39 Broadway, New York, preparing plans for fuse and detonator plant to cost \$33,500,000; will be operated by Hercules Powder Co.; owned by Government.

FLORIDA

DANIA—addition—Federal Power Commission, Washington, D. C. recommended construction of addition to Fort Lauderdale Power Plant owned by Florida Power & Light Co., Miami; to provide 25,000 kilowatt.

JACKSONVILLE—rosin plant—Filtered Rosin Products, Inc., W. T. Kelly, Vice Pres.; M. L. Rue, Pres., both Savannah, Ga.; will erect modern distillation plant on 20-acre site at intersection of Beaver and Lane Sts.; capacity of 20,000 units; construction program includes establishment of wholesale grocery and supply warehouse on plant site; both to be under ownership and operation of Consolidated Naval Stores Co., with interest in Filtered Rosin Products Inc.; estimated cost \$100,000.

ORLANDO—packing plant—Heller Brothers plans erection of \$150,000 citrus and vegetable packing house on 40-acre tract; capacity 1,000,000 boxes yearly.

RIVER JUNCTION—power plant—Federal Power Commission, Washington, D. C. recommended construction of new power plant owned by Florida Power Corp., part of Florida Power & Light System; to produce approximately 40,000 kilowatt.

LOUISIANA

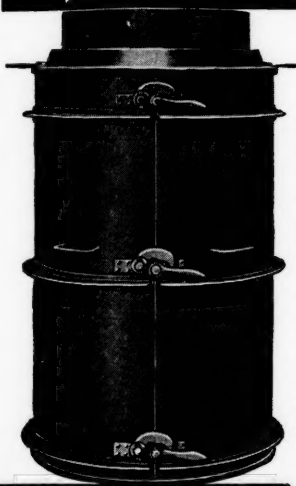
Pipe Line—Plantation Pipe Line Co., Atlanta, Ga., received bids July 11 for laying, welding and constructing pipe line between Baton Rouge, La., and Greensboro, N. C.; Ford, Bacon & Davis, 39 Broadway, New York, will be in charge of engineering; estimated cost \$15,000,000.

LAKE CHARLES—magnesium plant—Mathieson Alkali Works, 60 E. 42nd St., New York, plans erection of plant to produce magnesium metal.

(Continued on page 56)

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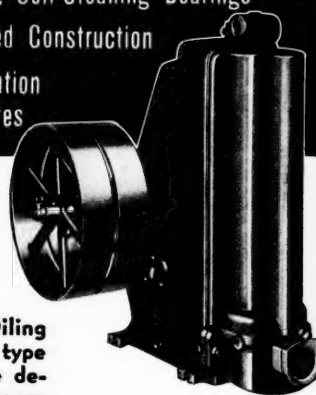
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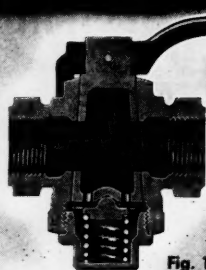


Fig. 1571 Air Cock
150 lb. Pressure



Air Nozzles
Non-Metallic Disc
Fig. 1840-PT, Hose End
Fig. 1841-PT, Pipe End
150 lb. Pressure

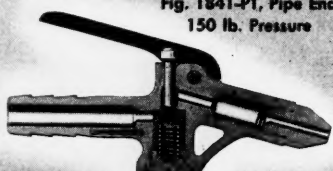


Fig. 1837
"N-M-D"
Quick Operating
150 lb. Pressure

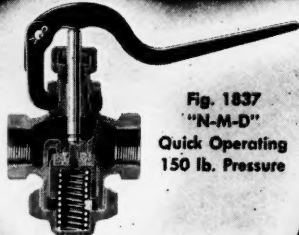


Fig. 635
Regrinding
Quick Operating
200 lb. Pressure

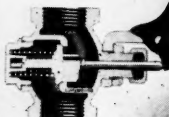
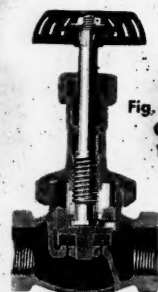


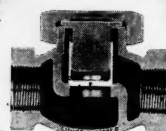
Fig. 123; "N-M"
Globe Valve
150 lb. S. P.



for Air
Fig. 1226, Top Outlet
5 to 250 lb. Pressure



Fig. 1616
Air Compressor Check Valve
200 lb. Pressure



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New Plants in the South

(Continued from page 54)

duce 15,000 to 20,000 tons of lightweight metal annually; plans subject to approval of Defense Plant Corp.; estimated cost \$16,000,000; require one year to build; will obtain magnesium from dolomite ore near Burnet, Texas; International Agricultural Corp., 61 Broadway, New York, also plans erection of magnesium plant.

NEW ORLEANS—shipbuilding—Todd-Johnson Dry Docks Inc., has allotment of \$3,140,000 for conversion of facilities for repair of naval vessels.

MARYLAND

Repair Facilities—Navy Department plans expending \$7,000,000 additional for repair facilities at Maryland Dry Dock Co.'s ship repair plant at Fairfield and Bethlehem Steel Co.'s ship repair yard at Key Highway.

BALTIMORE—cable manufacture—Western Electric Co., will lease Curtiss-Caproni building at municipal airport for manufacture of cables for army and navy.

BALTIMORE—shipbuilding—Maryland Dry Dock Co. has allotment of \$3,804,256 for plant expansion; includes approximately \$3,393,190 for land, buildings and facilities, and \$501,066 for machinery and equipment.

BALTIMORE—factory—Julian P. Friez & Sons, Inc., Division of Bendix Corp., plans erection of factory, Taylor Ave. near Loch Raven Blvd.; The Austin Co., 19 Rectory St., New York City, Archt.

MISSISSIPPI

Shell-Loading Plant—War Department, reported, considering sites in Mississippi for location of shell loading plant; Bolton, Wren and Flora under consideration; estimated cost \$25,000,000.

MISSOURI

KANSAS CITY—expansion—Aircraft Accessories, Inc., 410 W. 6th St., Donald M. Stoner, V. P. and Gen. Mgr. of Kansas City Division, plans enlargement of plant facilities.

ST. LOUIS—expansion—Union Electric Company of Missouri, 12th & Locust Sts. reported, plans \$15,000,000 expansion during next 2 years.

ST. LOUIS—aircraft gun turret plant—Defense Plant Corp., subsidiary of RFC, authorized execution of a lease agreement with Emerson Electric Manufacturing Co., 1824 Washington St. to provide for construction and equipment of plant for manufacture of aircraft gun turrets; estimated cost \$10,529,173, of this amount \$2,922,157 will be used for land and buildings and \$7,607,016 for machinery and equipment.

ST. LOUIS—plant—American Can Co., 41 Branch St., will erect \$2,000,000 plant on a 30-acre tract, east side of S. Kingshighway, between Juniata St. and Missouri Pacific tracks; will manufacture metal and fiber containers; factory building will occupy 12 acres, buildings on site to be demolished; will install modern equipment; 1-story; brick and steel; 500,000 square feet of floor space; 5 tracks with daily capacity of 60 cars and 2 sorting tracks included in plans; C. G. Preis, chief engineer and architect for company.

NORTH CAROLINA

BADIN—aluminum plant—Aluminum Company of America in cooperation with office of Production Management, reported, completing negotiations for construction of an aluminum plant at Badin; estimated cost \$7,000,000.

FONTANA—dam, etc.—Aluminum Company of America, Pittsburgh, Pa., and TVA reached agreement for construction of dam and power facility at Fontana water site on Little Tennessee River in North Carolina; agreement contingent on appropriation from Congress.

HICKORY—yarn mill—Quaker Meadows Mills, Inc., chartered by C. V. Cline, B. B. Blackwelder and associates, with \$600,000 capital; erect building on Highway No. 70 in Hildebran; 127x435 ft.; manufacture yarn and twine.

OKLAHOMA

Electric Project—Federal Power Commission recommended expenditure of \$30,000,000 (Continued on page 58)

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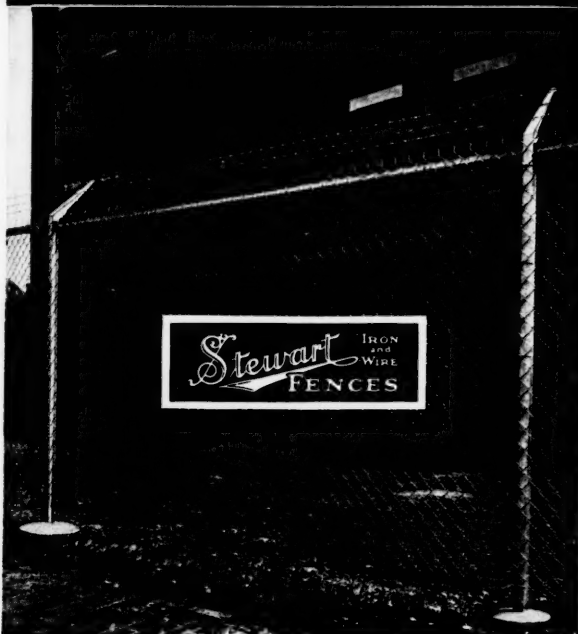


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AUGUST NINETEEN FORTY-ONE

57

New Plants in the South

(Continued from page 56)

for two new Oklahoma electric projects as part of the program to meet defense power needs; to yield 60,000 kw. by 1943; proposed projects would be at Fort Gibson on Arkansas River and at Markham's ferry also on the Arkansas River; both sites near Muskogee.

SOUTH CAROLINA

CHARLESTON—shipbuilding—R. L. Bradham & Sons of James Island, low bidder at \$37,690 for furnishing approximately 50,000 cu. yds. of dry earth fill and Charleston Constructors, Inc., Adgers Wharf, low at \$46,750 for construction of shipbuilding ways for Charleston Shipbuilding and Drydock Co.; work is part of the \$1,050,000 rebuilding program now under way; work started by Charleston Constructors on extension of concrete drain and sewer at cost of \$18,628, and driving piling at \$79,980; same firm has contract to move present office building and construct pile foundation for it; to furnish and erect three prefabricated steel buildings at \$25,068 and to reconstruct present machine shop at \$15,941; W. R. Zobel, 9 George St., has contract to wreck existing building; Dotterer Engineering Co., 21 Broad St., will open bids about July 30 for structural steel shipfitters' shop; new pier; 1,400 ft. of concrete and sheet pile shore protection, and an office building.

CHESTER—milk plant—Borden Milk Co., purchased equipment to convert company's plant into a condenser with a daily capacity of 150,000 lbs. of milk; pre-cooling stations will probably be established at Lancaster and Newberry.

TENNESSEE

CLEVELAND—pipe line—Bradley County Court granted to Plantation Pipeline Co., a franchise to lay one or more pipe lines through Bradley county to pipe gas and oil from Louisiana to Atlantic seaboard; company plans construction of \$15,000,000 line from Baton Rouge, La. to Greensboro, N. C.

FAYETTEVILLE—cheese plant—Kraft-Phenix Cheese Corp., 500 N. Peshtigo St., Chicago, Ill., reported, planning construction of cheese processing plant; estimated cost \$500,000.

KNOXVILLE—terminal—Plantation Pipe Line Co., Atlanta, Ga., acquired a 39 acre tract on Middlebrook Pike for erection of terminal; capacity for storing 80,000 bbls. of gasoline; company plans construction of \$20,000,000 pipe line from Baton Rouge, La. to Greensboro, N. C.

ROCKWOOD—ferro-manganese blast furnace—Tennessee Products Corp., American National Bank Bldg., Nashville, has authority from Defense Plant Corp., of an amendatory lease agreement to provide for a \$75,000 increase in commitments for reconditioning 2 ferro-manganese blast furnaces at company's plant recently opened at Rockwood; original commitment \$450,000.

TEXAS

Pipeline—Trans-American Pipeline Co., may construct \$25,000,000 pipeline from Wichita County, Tex. to a deep water terminal at Savannah, Ga.; line would be 1050 miles long, 10-inches in diameter first 300 miles and 12 inches the remainder; may construct refinery at Savannah.

AMARILLO—plant—President wants \$1,250,000 congressional appropriation for new helium plant near here.

DALLAS—airplane improvements—Army Air Corps authorized improvements to buildings and grounds of the North American Aviation, Inc., Inglewood, Calif.; work to be under supervision of James Stewart & Co., 230 Park Ave., New York, general contractor for the original \$7,500,000 airplane plant; included in the addition are a flight test building, garage building, laying of sidewalks, alterations and changes to existing buildings; cost \$100,000.

FREEPORT—plant expansion—War Dept. received recommendation for expansion of Dow Chemical Co. plant at Freeport, to capacity of 80,000,000 pounds or more a year of magnesium.

HOUSTON—metal works—Wyatt Metal

and Boiler Works, Washington and M K T Railroad tracks acquired 3½ acre tract adjoining plant on the south; plans expansion program.

HOUSTON—scrap steel plant—Houston Compressed Steel Corp., organized by Max and A. M. Byer of Cincinnati, Ohio, acquired 4 acres of Yale St. north of Washington Ave. for erection of scrap steel plant; install 140,000 lb. hydraulic press; expend \$100,000 for plant and buildings; 1-story fireproof.

HOUSTON—shipyard—Maritime Commission announced capacity of Houston Shipbuilding Co.; plant on Irish Bend Island, will be doubled at cost of \$7,000,000 and orders for some \$50,000,000 in additional ships will be placed; 9 ways now under construction will be doubled in capacity; an 18-way yard costing nearly \$15,000,000 is in prospect.

PORT ARTHUR—shell cases—George W. Armstrong, Sr., 2305 Edwin St., Fort Worth, has option on 1163 acres east of city as site for proposed \$2,500,000 steel mill; will operate two 30-ton electric furnaces; manufacture 105-155 millimeter shell cases for U. S. Navy.

VIRGINIA

NEWPORT NEWS—repair facilities—Newport News Shipbuilding & Dry Dock Co., will probably receive \$3,000,000 from Navy Dept. for expansion and repair facilities.

WEST VIRGINIA

DUNBAR—vinylite plant—Carbide & Carbon Chemicals Corp., Charleston, reported, plans erection of vinylite plant on 147 acres near Dunbar along the Kanawha River.

HUNTINGTON—pipe line—West Virginia Gas Corp., Union Trust Bldg., Charleston, contemplates construction of pipeline to connect the Grapevine Creek and Lincoln county gas fields to augment fuel supply to Huntington industrial plants; estimated cost \$200,000.

INSTITUTE—expansion—Carbide & Carbon Chemical Corp., 437 McCorkle Ave., Charleston, will acquire 158-acre site for establishing a plant for the manufacture of plastic bases, it is reported.

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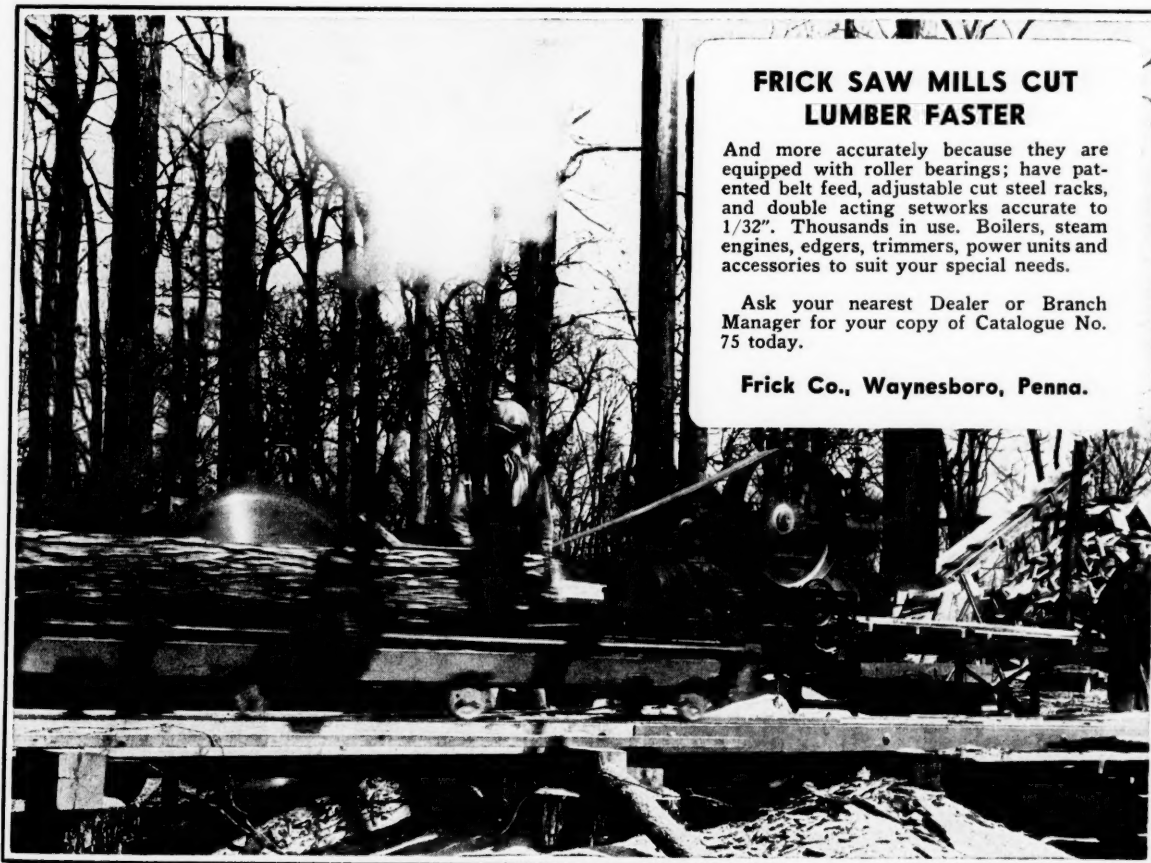
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Conservation for Defense

(Continued from page 26)

which a substitute will have to be found, since there is every likelihood that shipping from the above area will be the hardest hit by naval warfare. One problem was the replacement of cork in bottle caps, but experiments, Mr. McConnell said, have been carried out with rubber derivatives and plastics which will probably provide the answer. He added, "We do not need cork in linoleum or on lots of insulation; there are better insulators than cork in many instances." Thus cork itself may be devoted entirely to such necessities as the gaskets of airplane engines.

The question of simplification of design is also an important one. As an example, the manufacturers of wood screws discussed the various types and sizes of screws with the Office of Production Management. After the meeting, O.P.M. requested the industry to discontinue 507 types and sizes of the 885 then manufactured. This represented fifty-seven per cent of the types and sizes and only 3.8 per cent of the industry's sales. This elimination in-

(Continued on page 61)

Ship Crisis Need Fosters Bethlehem Employee Training

(Continued from page 42)

Supplementary class training in such subjects as blueprint reading and mathematics is given in a number of the skilled crafts.

As much instruction as possible is given on the job. When this is not possible, working conditions are simulated closely. At the Baltimore Yard, for example, old steel plates taken from ships under repair are set up on girders so that prospective riveters, caulkers and burners can work "from under," "from over," or "against," rather than merely practice operations from one or two established positions.

Breaking down crafts into special job classifications and moving learners along, individually, according to learning capacity, have been two important factors in reducing the time required. For instance, a course for ship-fitters was set up at the Sparrows Point Yard, with a definite schedule based on previous experience. It was found that by increasing the instructors so that learners would receive individual coaching, ship-fitters could be put on their own,

in restricted fields, in as short a time as six weeks.

The number of learners under one instructor in the ship-fitting course is limited to fifteen. Size of classes varies with different kinds of training. In this course an hour each day is given over to classroom instruction, blueprint reading, some mathematics and general shipyard procedure. Practice in developing plates, braces, and other ship parts is obtained with cardboard models. The balance of the time is spent on the job under close supervision of instructors, with the learners progressing from simple to complex tasks as the requisite skill is acquired.

Welders receive brief lessons in handling the electrode holders and torches and then practice on scrap metals under the watchful eyes of their teachers, who criticize their work. Soon, familiar with the materials and welding currents most likely to be encountered, they qualify as welders. They receive periodic personal guidance until allowed to proceed on their own in exacting production duties. The general procedure is the same in other classes of work, with variations to meet the special nature of the operations. Emphasis is always on doing real work under actual production conditions.

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Conservation for Defense

(Continued from page 60)

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Cork*	10 to 1
Copper	5 to 2
Mica*	3 to 1
Nickel	2 to 1
Alloy Steels	2 to 1
Tungsten*	2 to 1
Zinc	3 to 2
Tin*	3 to 2
Chromite*	3 to 2
Manganese*	3 to 2
Mercury*	3 to 2
Plastics	3 to 2
Nitrates	8 to 7
Rubber*	10 to 7
Power	10 to 9
(3 to 2 in southeast)	
Steel	10 to 9
(3 to 2 on plate, etc.)	

*Strategic imported materials in which Government and industry stock piles are being created, and wherein stock pile tonnage requirements are considered as defense requirements.

Savannah's New Shipyard

(Continued from page 27)

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Fluorescence From West Virginia Mountains

(Continued from page 22)

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